

Connecting the World for a Cause




dcvmn
2016



WELCOME NOTE FROM THE PRESIDENT

Dear Members and Friends,

This year, we are delighted to welcome five new members into the DCVMN community: Zydus Cadila, HLL, and Green Signal Bio from India, AMSON from Pakistan, and our 50th member, BIOL from Argentina. On behalf of all members, I would like to extend my warmest welcome to the new members, and wish them plenty of success in the near future, and hope for them to benefit from DCVMN as a jump board onto the global health stage, and as a platform to flourish future collaborative opportunities within the network, with the common goal of providing high-quality vaccines for all people.

Together with health authorities, DCVMN members are devoted to provide a sustainable supply of traditional vaccines, remediate vaccine shortages, and develop new vaccines opposing to future outbreaks. I am eager to meeting the new members personally.

This year, on February 1st 2016, the World Health Organization has declared that the recent cluster of microcephaly cases and other neurological disorders reported in Brazil, following a similar cluster in French Polynesia in 2014, and potentially linked to Zika viral infections, constitutes a Public Health Emergency of International Concern. We wish to ensure our support in the search for vaccines to control Zika, and other mosquitoes transmitted threatening infections, and explore innovative collaborations among DCVMN members and the world.

Particularly, I wish to thank the loyalty of all members that continue to support and strength the Network over so many years, offering their solidarity and friendship, enabling the network succeed as a recognized international industry platform for grow and prosperity.

I am proud of vaccine manufacturers from developing countries!

A handwritten signature in blue ink, belonging to Mahendra Suhardono. The signature is stylized and fluid.

Mahendra Suhardono
DCVMN President

EXECUTIVE COMMITTEE MEMBERS



Mr. Mahendra Suhardono
President
Bta Fama, Indonesia



Mr. Rajinder Kumar Suri
Vice President
Panacea Biotech Limited, India



Dr. Alda Homma
Treasurer
Bta-Manguinhos (Fiocruz), Brazil



Mr. Borysram Prasad
Biological E. Limited, India



Ms. Meng Li
China National Biotech Group Co. Ltd., China



Mr. Patrick Tippoo
The Biovac Institute, South Africa



Mr. Jullman
GAVI Board Alternate
Bta Fama, Indonesia



Dr. Steven Gao
Xiamen Innovax Biotech Co. Ltd., China



Mr. Adar Poonawalla
GAVI Board Representative
Serum Institute of India Ltd., India



Dr. Sonia R Pagliusi
Executive Secretary
DCVMN International

Member Organizations' Geographical Presence

| | |
|---|-------------------|
|  | Argentina |
|  | Bangladesh |
|  | Brazil |
|  | Cuba |
|  | Egypt |
|  | India |
|  | Indonesia |
|  | IR of Iran |
|  | Mexico |
|  | Pakistan |
|  | P.R. China |
|  | Republic of Korea |
|  | Saudi Arabia |
|  | South Africa |
|  | Taiwan |
|  | Thailand |
|  | Vietnam |



Name of the company : **AMSON Vaccines & Pharmaceuticals Ltd.**

Head of Institution :

Established :

Location : **Pakistan**

Overview of the company

AMSON Vaccines & Pharmaceuticals Ltd. with head quarters in Rawalpindi and manufacturing facilities in Islamabad, is a vaccine and pharmaceutical company dedicated to prevention in health care. In 1995 AMSON made history becoming the first private sector vaccine manufacturer in Pakistan. Presently we are manufacturing vaccines against Hepatitis B, tetanus and typhoid fever. We have another distinction of being the pioneer of auto disabled syringes in Pakistan, and our device has been recognized CE Mark and has been prequalified by WHO.

Other products include dimemorfan phosphate, orotic acid, vitamin B12, folic acid and hydrocortisone sodium succinate.

The company has been awarded ISO 9001, ISO 13485, ISO 14000 and ISO 18000 certificates by Lloyds, U.K.

Minhai is collaborating and competing with world class vaccine enterprises, working hard to share Minhai's safe, stable and affordable vaccines with all human beings around the world.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|-------------|----------------------|--|
| | | | |
| | | | |

Future Product Pipe Line

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-
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| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

Contact Details

Name of contact person

:

Address

:

City

:

State

:

Location

:

Postal code

:

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Name of the company : **Arab Company for Pharmaceutical Products (Arabio)**
 Head of Institution : **Dr. Majed Saeed Bahatheq** (Arabio CEO)
 Established : **Arabio is a limited liability company established in 2005**
 Location : **Saudi Arabia**

Overview of the company

Arabio is a biopharmaceutical company specialized in human vaccines, and other biopharmaceuticals.

It is the first biopharmaceutical company in the Gulf Cooperation Council (GCC). The size and scope of activities intended to be made in Arabio would make Arabio the first biological company of its kind in the Middle East.



Arabio aims to bring to the markets of the Middle East, North Africa, and high quality products that comply with the international quality standards.

Arabio has production lines of pre-filled syringes, liquid vials and lyophilized vials from the best global machines suppliers to make high quality products and meet cGMP & international standards.

Description of ARABIO capabilities

- Biological sterile manufacturing
- PFS and vial filling
- PFS and vial blister packaging

Arabio Partners:

1. Novartis Vaccine
2. GSK Vaccines
3. InterVax Vaccine
4. BioFarma, Indonesia
5. AbbVie
6. J & J
7. Bioton, Poland

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--|-------------|----------------------|--|
| Cervical Cancer HPV | | PFS | |
| Hepatitis B Pead | | Vial | |
| Hepatitis A Pead | | Vial | |
| Hexa vaccine (DTaP, Polio, HiB, HepB) | | PFS | |
| (DTaP, HiB) | | PFS | |
| (DTaP) | | PFS | |
| (DTaP) | | PFS | |
| Rota Virus | | PFS | |
| Pneumococcal | | PFS | |
| (DTaP) adult | | PFS | |
| Hep. B adult | | Vial | |
| Hep. A adult | | Vial | |
| Meningococcal conjugate ACWY vaccine | | Vial | |
| Penta Vaccine (DTwP, HiB, HepB) | | Vial | |
| Sesonal Influenza Vaccine | | PFS | |
| BCG | | Amp | |
| Tuberculin | | Vial | |
| Oral Polio Vaccine (trivalent) 10 ds | | Vial | |
| Tetanus Toxoid (TT) vaccine 10 ds | | Vial | |
| Diphtheria-Tetnus (DT) Pediatric vaccine | | Vial | |
| Humira | | PFS | |
| Survanta | | Vial | |
| Sevoflurane | | Bottel | |
| Resperdal Consta | | Vial | |
| Velcade | | Vial | |

Future Product Pipe Line

- MMR
- Varicella
- MMRV
- Dengue Fever vaccine
- RSV

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

Vaccines:

- MMR
- Varicella
- MMRV
- Dengue Fever vaccine
- RSV

Biological Products:

- Insulin
- Protein kinas inhibitor
- Blood coagulation
- Anti TNF products
- Hormonal contraceptive
- Heparins
- Growth hormones
- Erythropoietin
- MAB antineoplastic
- Interferons

Contact Details

Name of contact person

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Name of the company : **Beijing Minhai Biotechnology Co., Ltd.**

Head of Institution : **Dr. Zheng Haifa**

Established : **2004**

Country : **P.R. China**

Overview of the company

Beijing Minhai Biotechnology Co.,Ltd.(referred to as "Minhai") is a modern biotechnology enterprise specialized in vaccine R&D, production and distribution. Minhai's mission is to provide safe, stable and affordable vaccines; increase immunization coverage, reduce the incidence of infectious disease and mortality; protect human health.

Minhai was founded in June 2004, with a registered capital of 200 million RMB and a total asset of 800 million RMB, at No.35, Simiao Road, Bio-medicine Industry Park in Daxing District, Beijing, which has a leading R&D center and a modern vaccine manufacturing site composed of over 60,000 m2 GMP compliant workshops, equipped with advanced large-scale bacteria vaccine production line and virus vaccine production line.

Until 2015, there are three commercialized vaccine products in China, including Hib conjugate vaccine, MR vaccine and DTaP-Hib vaccine. DTaP-Hib vaccine, which is independently developed by Minhai, is the first domestic quatri-valent vaccine.

There are over 20 vaccines in Minhai's pipeline (from pre-clinical trial to NDA), including pneumococcal conjugate vaccine, HDCV rabies vaccine, sabin IPV and meningitis conjugate vaccine etc.



In the meantime of developing novel vaccines, Minhai initiated international registration and accelerated the process of export. From 2013, Minhai has started the registration of three marketed products in more than 10 countries including India, Russia and the Philippines, and initiated WHO prequalification preparation. Minhai is enlarging multi-angle, multi-level international collaboration, and extensively promote globalization strategy.

Minhai is collaborating and competing with world class vaccine enterprises, working hard to share Minhai's safe, stable and affordable vaccines with all human beings around the world.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|--|-----------------------|-------------------------------------|
| Hib | Hemophilus Influenae type b vaccine | Vial | 0.5 ml |
| DTaP-Hib | Diptheria, Tetanus, accellular Pertussis, and Hemophilus Influenae type b combined vaccine | Vial | 0.5 ml+0.5ml |
| MR | Measles and Rubella combined vaccine | Vial | Lyophilized |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| 23-valent Pneumococcal Polysaccharide Vaccine | | | | NDA | 2017 |
| ACYW135 Meningococcal Polysaccharide Vaccine | | | | NDA | 2017 |
| DTaP | | | | NDA | 2017 |
| HDCV Rabies (non-purified) | | | | NDA | 2017 |
| ACYW135 Meningococcal conjugate Vaccine | | | | | |
| Hib (Lyo) | | | | | |
| Inactivated HepA | | | | | |
| 13-valent Pneumococcal Conjugate Vaccine | | | | | |
| Influenza (Split) | | | | | |
| Cholera(Oral) | | | | | |
| Recombinant HepB (Hansenula) | | | | | |
| sIPV | File IND | | | | |
| HDCV rabies (purified) | File IND | | | | |
| Tuberculosis | | | | | |
| Component DTP | | | | | |
| 15-valent PCV | | | | | |
| DTaP-Hib-sIPV Combined Vaccine | | | | | |
| 5-valent Rotavirus | | | | | |
| Zoster | | | | | |
| H7N9 influenza | | | | | |
| Varicella | | | | | |
| Quadrivalent HPV | | | | | |
| HSV | | | | | |
| Ev71 | | | | | |
| H1N1 Influenza | | | | | |
| Group B Meningitis | | | | | |

Areas of Interest for Collaboration

- Technology Transfer
- Vaccine Co-development
- Overseas Registration and Distribution

Contact Details

| | | | |
|------------------------|--|---------|----------------------------|
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| Location | : P.R. China | Website | : http://www.biominhai.com |
| Postal code | : 102600 | | |



Name of the company : **Beijing Tiantan Biological Products Co., Ltd.**
 Head of Institution : **Mr. Zeng Lingbing, General Manager**
 Established : **1998**
 Location : **P.R. China**

Overview of the company

Beijing Tiantan Biological Products Co., Ltd. (abbreviated as TiantanBio) is a state-controlled listed corporation for high technology, engaging in research, manufacturing and marketing of biological products such as vaccines, blood derivatives and diagnostic kits. It's a spin-off company from National Vaccine & Serum Institute (NVSII) and became public listed in the China Shanghai Stock Exchange since 1998. TiantanBio owns several subsidiary companies, such as Chengdu Rongsheng Pharmaceutical Co., Ltd., Changchun Keygen Biological Products Co., Ltd., and several serum sampling companies. Now China National Biotec Group Company Limited is its controlling shareholder. At present, TiantanBio has more than 2200 staffs, including a batch of influential senior technical personnel working in the field of R&D, manufacturing and quality assurance.



TiantanBio has the most complete portfolio of vaccines in the National Immunization Program. The leading products are Hepatitis B Vaccine (Yeast Recombinant), Attenuated Measles Mumps and Rubella Combined Vaccine Live, Attenuated Measles and Rubella Combined Vaccine Live, Diphtheria Tetanus and Acellular Pertussis Combined Vaccine Adsorbed, Poliomyelitis Vaccine in Dragee Candy (Human Diploid Cell) Live, Japanese Encephalitis Vaccine (Vero Cell) Inactivated, Attenuated Freeze-dried Varicella Vaccine Live, Influenza Vaccine (Spilt Virion) Inactivated, H1N1 Influenza A Vaccine (Spilt Virion) Inactivated, Human Albumin, Human Immunoglobulin (pH4) for Intravenous Injection, Human Immunoglobulin and so on.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|---|----------------------|--|
| TEMREVAC | Hepatitis B Vaccine made by Recombinant DNA Techniques in Yeast | Ampoule | 0.5ml , 1.0ml |
| | Yellow Fever Vaccine, Live | Vial | 6 doses 0.3ml |
| | Influenza Vaccine (Split Virion), Inactivated | Injector /Vial | 0.5ml |
| RUBEVAC | Rubella vaccine, Live (Human Diploid Cell) | Vial | 0.5ml |
| | Japanese Encephalitis Vaccine (Vero Cell), Inactivated | Vial | 0.5ml |
| | Measles, Mumps and Rubella Combined Vaccine, Live (M/R/MR/MMR) | Vial | 0.5ml |
| | Poliomyelitis Vaccine in Dragee Candy (Human Diploid Cell), Live | Pill | 1g |
| Shengdoushi | Freeze-dried Live Attenuated Varicella Vaccine | Vial | 0.5ml |
| Trivac | Diphtheria, Tetanus and Acellular Pertussis Combined Vaccine, Adsorbed (DTaP) | Ampoule | 0.5ml |
| | Group A Meningococcal Polysaccharide Vaccine | Vial | 10 doses 300µg |
| | Typhoid Vi Polysaccharide Vaccine | Ampoule | 2 doses 1 ml |
| | Anti-human T Lymphocyte Rabbit Immunoglobulin | Vial | 25mg |
| | Human Hepatitis B Immunoglobulin | Vial | 100IU |
| | Human Albumin | Vial | 10ml/25ml/50ml |
| | Human Immunoglobulin(pH4) for intravenous Injection | Vial | 25ml/50ml |
| | Human Tetanus Immunoglobulin | Vial | 250IU |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Recombinant Interferon β 1b | | | | | |
| Meningococcal ACWY Vaccine (Polysaccharide) | | | | | |
| Meningococcal A+C Conjugate Vaccine | | | | | |
| MMR+ Varicella Vaccine | | | | | |
| Pertussis component vaccine | | | | | |
| Inactivated Poliomyelitis Vaccine | | | | | |

Areas of Interest for Collaboration

- Combined Vaccine
- Large-scale Production Technology
- Quality System
- New Antigen

Contact Details

Name of contact person : **Ms. ZHANG Yucui**

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email : **ttbiozyc@yahoo.com.cn**

Website: **<http://www.tiantanbio.com>**



Name of the company : **Bharat Biotech International Ltd.**

Head of Institution : **Dr. Krishna M Ella, Chairman & Managing Director**

Established : **1996**

Country : **India**

Overview of the company

Bharat Biotech was founded in 1996 by Dr. Krishna Ella and Mrs. Suchitra Ella, with focus on developing and manufacturing novel vaccines and biologics. The company has fully integrated expertise in Research & Development, Product Development, Clinical Development, GMP Manufacturing, Quality Management Systems, Marketing, Sales and Distribution.

Bharat Biotech is a WHO Prequalified manufacturer of BIOPOLIO® for supply to UN Agencies.

ROTAVAC®, TYPBAR-TCV®, and JENVAC®, are three recently licensed vaccines against, rotavirus, typhoid, and Japanese encephalitis infections respectively. These innovative vaccines reaffirm our focus on product development for developing world countries.



ROTAVAC®, has been introduced into the Universal Immunization Program in India during March 2015.

Bharat Biotech has a long history of developing novel health care solutions with focus on developing world populations. Vaccines against Zika and Chikungunya infections, are being transitioned from preclinical testing to human clinical trials.

Bharat Biotech has filed more than 50 patents worldwide with tradition of developing and respecting IPR. With globally accredited facilities, Bharat

Biotech supplies its products to more than 65 countries.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|----------------|--|-----------------------|-------------------------------------|
| Revac-B+® | Hepatitis B Vaccine (rDNA) | | |
| Revac-B® mcf | Recombinant Hepatitis B (rDNA) Vaccine , thiomersal free | | |
| INDIRAB® | Purified Inactivated Rabies Vaccine | | |
| TYPBAR® | Typhoid Vi Capsular Polysaccharide Vaccine | | |
| HNVAC® | H1N1 Pandemic Flu Vaccine | | |
| BIO-HIB® | <i>Haemophilus influenzae</i> Type b, Conjugate Vaccine (PRP-TT Conjugate), Lyophilized | | |
| Typbar-TCV® | Typhoid Vi Capsular Polysaccharide – TT conjugate vaccine | | |
| JENVAC® | Purified, inactivated Japanese Encephalitis Vaccine | | |
| ROTAVAC® | Oral Rotavirus 116E Vaccine, Live attenuated IP/BP | | |
| BIOPOLIO B1/3® | Oral Polio Vaccine (Live) IP/BP | | |
| ComVac® 3 | Diphtheria Tetanus Pertussis (whole cell) Vaccine (DTwP) | | |
| ComVac 4®-HB | Diphtheria, Pertussis (w), Tetanus, Hepatitis-B (DTwP+Hep-B) Vaccine | | |
| ComVac® 5 | Diphtheria, Pertussis(w), Tetanus, Hepatitis-B (DTwP+Hep B+Hib) & <i>Haemophilus influenzae</i> Vaccine, (Pentavalent Vaccine) | | |
| REGEN –D® 60 | r- Human Epidermal Growth Factor Gel 60 µg/gm | | |
| REGEN –D® 150 | r- Human Epidermal Growth Factor Gel 150 µg/gm | | |
| SLVRGEN® | Recombinant Human Epidermal Growth Factor Silver Sulfadiazine & Chlorhexidine Gluconate Cream | | |
| BIOGIT® | <i>Saccharomyces boulardii</i> (Granular) 250 mg, oral | | |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Zika | | | | | |
| Chikungunya | | | | | |
| Tetanus (Meat free) | | | | | |
| Malaria PvRII | | | | | |
| THR-100 | | | | | |
| Lysostaphin Topical | | | | | |

Areas of Interest for Collaboration

- Development of novel vaccines for neglected diseases
- Development of novel therapeutics

Contact Details

| | | | |
|------------------------|------------------------------------|---------|------------------------------|
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| Location | : India | Website | : www.bharatbiotech.com |
| Postal code | : 500 078 | | |



Biological E. Limited
Celebrating Life Every Day

Name of the company : **Biological E. Limited**

Head of Institution : **Ms. Mahima Datla, Managing Director**

Established : **1953**

Country : **India**

Overview of the company

Biological E Ltd (BE) is established in the year 1953 in Hyderabad, India. Over the years, we have built up a very significant share in the world of vaccine market, especially in the pediatric range. Our company is a major supplier to the National Immunization Programme (EPI programme) of the Government of India, UNICEF and Pan American Health Organisation. BE envisages becoming a major world player in vaccine business by expanding the product range, market access, improving infrastructure through investments, increasing manufacturing and development capabilities and marketing agreements.

BE achieved WHO Prequalification status for various vaccines viz. Tetanus, Pentavalent (DTP-HepB-Hib), Japanese Encephalitis, DTP and Td. BE is the first company in the world to get WHO prequalification for Japanese Encephalitis vaccine.



As part of continuous efforts to develop new products for human use, BE is currently engaged in development and commercialization of several recombinant, conjugate, bacterial & viral vaccines. BE has productive partnerships with several well respected and renowned Institutions and Public Health Services across the world for joint development of new products to fulfill the unmet needs of India and other regions countries.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation |
|--------------|---|--|--|
| ComBE Five | Pentavalent vaccine - Liquid Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus type B conjugate vaccine (DTwP-HepB-Hib) | Vial (Liquid) | 1, 2, 5 & 10 dose |
| ComBE Five | Pentavalent vaccine - Lyophilized Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus type B conjugate vaccine (DTwP-HepB+Hib) | Vial (Liquid + Lyophilised) | 1, 2, 5 & 10 dose |
| BETT | TT Adsorbed Tetanus Vaccine | Vial Ampoule | 1, 10 and 20 dose Single dose |
| TRIPVAC | DTwP Diphtheria, Tetanus and Pertussis vaccine (adsorbed) | Vial | 1 & 10 dose |
| BE Td | Td Diphtheria and Tetanus vaccine (Td) (for adolescents & adults) | Vial | 1 & 10 dose |
| JEEV | JE Japanese Encephalitis Vaccine, Inactivated (Strain SA14-14-2 propagated on Vero cell line) | Vial | 3 mcg / 0.5 ml 6 mcg / 0.5 ml |
| BI VAC | DT Adsorbed Diphtheria & Tetanus vaccine (for Pediatric) | Vial | 1, 10 & 20 dose |
| BEVAC | Hepatitis B Hepatitis B vaccine (recombinant) | Vial | 1, 2, 5 & 10 dose Pediatric and 1 & 10 dose Adult |
| TRIPVAC HB | Tetavalent DTP-HepB Diphtheria, Tetanus, w-Pertussis, Hepatitis B (recombinant) | Vial | 1, 2, 5 & 10 dose |
| HIBE | Hib Haemophilus type b conjugate vaccine (lyophilized) | Vial (combipack) | 1, 2, 5 & 10 dose |

• Products In Bold Letters Are Who Pre-qualified

Future Product Pipe Line

- MR – Measles & Rubella
- Hexavalent -DTP-HepB-IPV-Hib
- PCV - Pneumococcal Conjugate Vaccine
- TCV - Typhoid Conjugate Vaccine
- IPV – Inactivated Polio Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

- Vaccines – Bulk & Finished
- Long term partnership arrangements

Contact Details

| | | | |
|------------------------|---|-----------|--|
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| Country | : India | | |





Name of the company : **Bio Farma**

Head of Institution : **Iskandar, President Director**

Established : **August 6, 1890**

Country : **Indonesia**

Overview of the company

Bio Farma is a state-owned vaccine and antisera manufacturer in Indonesia and it plays a vital role in supporting the National Immunization Program. All of vaccines needed by Government are supplied by Bio Farma. The company has an extensive and strong major goal to responsibly endure its high quality vaccine production whilst holding the awareness to persistently develop the green industry by covering all the aspects of the green industry's activities.

Bio Farma was established in 1890 and throughout its extended history, the company has gone a long way from its beginning and has proven its strength to the world. This reputation has always been upheld properly and could be reflected from its magnificent qualification and ability to acquire WHO prequalification for its vaccines.



Bio Farma's products are exported to many countries through the direct distribution or UN agencies. Bio Farma actively involve in various international organizations such as WHO, International Vaccine Institute, DCVMN, GAVI and Self Reliance in Vaccine Production-in OIC.

In order to stimulate more breakthroughs ahead, the company pledge to conduct new products research, both independently or collaborate with research institutions. The partnership could lead to new vaccine development or new technology platform.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------------------|--|-----------------------|-------------------------------------|
| TT | Tetanus Toxoid Vaccine | Vial Uniject | 5.0 ml/10.0 ml 0.5 ml |
| Bio-TT | Tetanus Toxoid Vaccine | Ampoule | 0.5 ml |
| DT | Diphtheria and Tetanus Vaccine | Vial | 5.0 ml |
| Td | Tetanus and Diphtheria Vaccine (for adult) | Vial | 5.0 ml |
| DTP | Diphtheria, Tetanus and whole -cell Pertussis Vaccine | Vial | 5.0 ml |
| DTP-HB | Tetavalent Combination Vaccine | Vial | 2.5 ml/5.0 ml |
| HB | Hepatitis B Vaccine | Uniject | 0.5 ml 1.0 ml (for adult) |
| mOPV, bOPV | Monovalent, bivalent Polio Vaccine | Vial | 2.0 ml |
| Measles | Measles Vaccine | Vial | 10 doses/20 doses |
| BCG | Tuberculosis Vaccine | Ampoule | 20 doses |
| Flubio | Seasonal flu Vaccine | Vial | 0.5 ml/2.5 ml |
| DTP-HB-Hib (Pentabio) | Diphtheria, Tetanus, Whole-cell Pertussis, Hep-B and Haemophilus Influenzae type b | Vial | 0.5 ml/2.5 ml/5.0 ml |

Future Product Pipe Line

- Sabin-IPV (sIPV)
- Rotavirus Vaccine
- Flu Vaccine (Pandemic)
- Measles Rubella Vaccine
- Typhoid Conjugate Vaccine

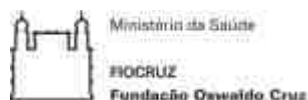
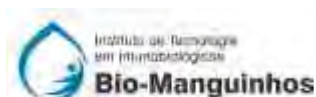
| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Sabin-IPV (sIPV) | | | | | |
| Rotavirus Vaccine | | | | | |
| Flu Vaccine (Pandemic) | | | | | |
| Measles Rubella Vaccine | | | | | |
| Typhoid Conjugate Vaccine | | | | | |

Areas of Interest for Collaboration

- Capacity Building
- QMS Training
- Research
- Product Development & Process Innovation
- Marketing & Distribution

Contact Details

| | | | |
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| Postal code | : 40161 | | |



Name of the company : **Bio-Manguinhos-Immunobiological Technology Institute**
The Oswaldo Cruz Foundation - Ministry of Health

Head of Institution : **Artur Roberto Couto**

Established : **Avenida Brasil, 4365 – Pavilhão Rocha Lima -**
Manguinhos, Rio de Janeiro - RJ – CEP: 21040-360

Location : **Brazil**

Overview of the company

The Immunobiological Technology Institute - Bio-Manguinhos is a federal laboratory for R&D and production of immunobiologicals in Brazil, created in 1976.



Bio-Manguinhos is a technical-scientific unit of the Oswaldo Cruz Foundation (Fiocruz), which is directly linked to the Brazilian Ministry of Health.

This unit plays a strategic role in its national public health scenario, supplying a range of products - among vaccines, biopharmaceuticals, IVD reagents and services. Thereby, Bio-Manguinhos contributes to the enhancement of the Brazilian Unified Health System (SUS).

Moreover, the Institute has two vaccines prequalified by WHO: Yellow fever and polysaccharide meningitis AC, the first one having already been supplied to more than 70 countries around the world, mainly through the United Nations Agencies.

Bio-Manguinhos has a wide experience with national and global partnerships for co-development and technological transfer processes, and is open to new partnerships with a view to the provision of new biotech products to the population.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|------------------------------|--|--------------------------|--|
| Vaccines | | | |
| DTP + Hib | <i>Diphtheria, Tetanus, Pertussis and Haemophilus influenza type b</i> | 5 doses/vial | 2.5 ml |
| Hib | <i>Haemophilus influenza type b</i> | 1 and 5 doses/vial | 0,5 and 2,5 ml |
| MMR | <i>Measles, Mumps and Rubella</i> | 10 doses/vial | 5,0 ml |
| MMRV | <i>Measles, Mumps, Rubella and Varicella</i> | 1 dose/vial | 0,5 ml |
| OPV | <i>Oral Poliomyelitis</i> | 25 doses/tube | 2,5 ml |
| IPV | <i>Inactivated Poliomyelitis</i> | 10 doses/vial | 5,0 ml |
| Rotavirus | <i>Rotavirus vaccine</i> | 1 dose/vial | 2,0 ml |
| 10 – valent Pneumococcal | <i>10 – valent Pneumococcal vaccine</i> | 1 dose/vial | 0,5 ml |
| Polysaccharide Meningitis AC | <i>Polysaccharide Meningitis AC vaccine</i> | 10 doses/vial | 1,5 ml |
| Yellow Fever | <i>Yellow Fever vaccine</i> | 5, 10 and 50 doses/vial | 0,5, 1,0 and 25 ml |
| IVD Reagents | | | |
| NAT HIV/HCV | <i>Molecular Biology - NAT HIV/HCV</i> | 20 tests/kit | – |
| Imunoblot DPP® HIV -1/2 | <i>Rapid Test - Imunoblot DPP® HIV -1/2</i> | 20 tests/kit | – |
| DPP® HIV – 1/2 | <i>Rapid Test – DPP® HIV – 1/2</i> | 10 and 20 tests/kit | – |
| DPP® Syphilis | <i>Rapid Test – DPP® Syphilis</i> | 20 tests/kit | – |
| DPP® Canine Leishmaniasis | <i>Rapid Test – DPP® Canine Leishmaniasis</i> | 20 tests/kit | – |
| DPP® Leptospirosis | <i>Rapid Test – DPP® Leptospirosis</i> | 20 tests/kit | – |
| Chagas Disease IFA | <i>Immunofluorescence – Chagas Disease</i> | 600 tests/kit | – |
| Canine Leishmaniasis ELISA | <i>ELISA - Canine Leishmaniasis</i> | 384 tests/kit | – |
| Human Leishmaniasis IFA | <i>Immunofluorescence – Human Leishmaniasis</i> | 600 tests/kit | – |
| Helm Test | <i>Kato Katz – Helm Test</i> | 100 tests/kit | – |
| Biopharmaceuticals | | | |
| Interferon alpha 2b | <i>Interferon alpha 2b recombinant</i> | 3, 5 and 10 MUI/vial | 1,0 ml |
| Erythropoietin | <i>Erythropoietin recombinant</i> | 2.000 and 4.000 UI/ vial | 1,0 ml |
| Alphataliglucerase | | 200 UI/vial | 5,0 ml |

Future Product Pipe Line

- Conjugate Meningitis C vaccine
- DTP/HB/Hib vaccine
- DTP/HB/Hib/MenC/IPV vaccine
- Dengue tetravalent vaccine (inactivated)
- Yellow fever vaccine improvement (attenuated)
- Yellow fever vaccine (inactivated)
- Yellow fever vaccine (plant-based vaccine)
- Leptospirosis vaccine (recombinant)
- Measles and Rubella vaccine
- Polysaccharide meningitis B vaccine
- Peginterferon Alpha 2b
- Humanized monoclonal antibody Anti-MRSA
- Humanized monoclonal antibody Anti-CD20
- Flex NAT Kit
- NAT Kit -HIV/HCV/HBV/malaria
- DPP® Syphilis treponemal and non-treponemal
- CD3CD4CD8CD45 kit
- Liquid Microarray

| Product Name | Pre Clinical | | Clinical | | Expected launch date Quarter / Year |
|--------------------|--------------|---------|----------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Bacterial vaccines | 2 | | 1 | 2 | - |
| Viral vaccines | 5 | | | | - |
| Biopharmaceuticals | 2 | | | 1 | - |
| IVD reagents | 4 | | | 1 | - |

Areas of Interest for Collaboration

- Prokaryotic expression
- Eukaryotic expression
- Conjugation
- Plant based

Contact Details

| | | | |
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Name of the company : **BioNet-Asia Co., Ltd.**

Head of Institution : **Mr. Vitoon Vonghangool**, President
Dr. Pham Hong Thai, Chief Executive Officer

Established : **2001**

Location : **Thailand**

Overview of the company

BioNet-Asia is an independent vaccine company with a focus on technological innovation and market access.

BioNet has built several strategic alliances fostering vaccine self-reliance leading to the production and supply of billions of doses of vaccines worldwide. In its vaccine manufacturing plant in Thailand, BioNet is developing a broad pipeline of vaccines in R&D and clinical stages, such as recombinant Pertussis, CRM197 protein carrier, Dengue and Hepatitis B vaccines. The company has successfully transferred the technology in Asia to produce Hib meningitis vaccine which is now commercialized and pre-qualified as a pentavalent vaccine. BioNet has also filed a patent application for a new

Recombinant Acellular Pertussis Vaccine that has been shown safe and highly immunogenic in a Phase I/II study. BioNet has several collaborations with first-class biopharmaceutical companies, vaccine manufacturers and academic organizations around the globe.

With a global market reach and network expertise, BioNet has been supporting vaccine manufacturers in their rapid expansion into international and emerging markets, finding and capitalizing on new growth opportunities.

Through its unique collaboration with many manufacturers, BioNet can propose a broad portfolio of vaccines in several countries.



Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|--|----------------------|--|
| Hib* | <i>Haemophilus influenzae</i> type b vaccine in combined pediatric formulation | | |
| TRCS Rabies* | Rabies vaccine | Vial | 0.5mL |

*In partnership

Future Product Pipe Line

- Recombinant acellular pertussis (aP) vaccine
- Adult combinations (TdaP based vaccines)
- Hepatitis B vaccine (HBV)
- Pediatric combinations
- Dengue vaccine
- Human papillomavirus vaccine (HPV)
- Japanese Encephalitis vaccine
- Chikungunya vaccine
- Protein carriers

| Product Name | Product development R&D phase | Pre Clinical | Phase 1 | Clinical Phase 2 | Phase 3 | Expected launch date Quarter / Year |
|--|-------------------------------|--------------|---------|------------------|---------|--|
| Recombinant acellular Pertussis vaccine | | | | | | |
| Adult combination vaccine | | | | | | |
| <i>Haemophilus influenzae</i> type b vaccine | | | | | | Already transferred the technology and launched the product in Asian country |

Areas of Interest for Collaboration

- Marketing and Distribution of vaccines
- Vaccine joint development and R&D collaborations
- Technology transfer forHib, HBV, HPV, Rabies
- In- and out-licensing opportunities

Contact Details

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| Postal code | : 13160 | | |



Name of the company : **BravoVax Co., Ltd.**

Head of Institution : **Dr. Ke Wu**

Established : **2012**

Country : **P.R. China**

Overview of the company

Established in 2012, BravoVax is located at East Lake Hi-tech Development Zone, Wuhan, China. Relying on the experienced management team and international resources of management team, and with the strong support of Humanwell Healthcare Group, one of the top 20 Chinese pharmaceuticals, the company has kept the momentum in its development, and maintains fast growth. The company has signed strategic cooperation agreements with world famous high-end equipment manufacturers and established Joint Standard Laboratory with them. In October 2014, the company was sublicensed the world-wide rights for the rotavirus vaccine from USA hence set a solid foundation to the development of the company and will

conduct a series of high-end vaccine industrialization development in compliance with WHO cGMP.



96% staffs of the company hold college and above degrees, and more than 45% of them have master and above degrees as well as senior professional titles. Moreover, more and more talents from multiple countries build up diversified culture in this international company. The company boasts its strong R&D team with profound performances and experiences.

Regard human vaccines as its core business, BravoVax motivates biopharmaceutical business development and resources integration; abides by the strategy to be a resource-friendly and environment-friendly enterprise; aims to be one of the best employers and the most respected enterprises.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|----------------------|---|-----------------------|-------------------------------------|
| Rotavirus vaccine | Oral, tetra-valent, attenuated; IND stage | Freeze-dried | 2 ml |
| Pneumococcal vaccine | Injectable, 13 valent, conjugate, pre-IND stage | Prefilled Syringe | 0.5 ml |
| Zikavirus vaccine | Injectable, monovalent, live recombinant | TBD | TBD |

Future Product Pipe Line

- Rotavirus vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|----------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Rota | | | | | 2020 |
| Pneumococcal vaccine | | | | | 2021 |
| Zikavirus vaccine | | | | | 2022 |

Areas of Interest for Collaboration

- Co-development of novel vaccines
- Tech-in/license-in of vaccine-related technology, patents, etc.
- Exportation of biologicals/vaccine finished products/bulk from Chinese manufacturers

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Postal code : **430075**



Name of the company : **CPL BIOLOGICALS PRIVATE LIMITED**

Head of Institution : **Mr. Atin Tomar, President**

Established : **2009**

Country : **India**

Overview of the company

Based in Ahmedabad, India, CPL Biologicals Pvt. Ltd. is a joint-venture biotechnology company established in 2009 by Novavax Inc., USA and Cadila Pharmaceuticals Limited, one of India's largest privately held pharmaceutical companies. CPL Biologicals has a three pronged approach to providing novel, affordable solution for global healthcare - vaccines, biologics and diagnostics, with integrated capabilities from early stage research and development to clinical and commercial manufacturing along with dedicated sales and marketing teams. CPL Biologicals has established state-of-the-art R&D and

manufacturing facilities in Dholka, Gujarat (India), which currently has the capability of producing up to 25 million doses every year.

CPL Biologicals aims to be a leading provider of high quality, affordable vaccines, biologics and diagnostics through world-class research and innovations combined with cost effective and efficient manufacturing to address current and future global health challenges.



Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--|---|-----------------------|-------------------------------------|
| Cadiflu (Pandemic Influenza Vaccine) | VLP based H1N1 Vaccine | Vial | 0.5 ml |
| Cadiflu-S (Seasonal Influenza Vaccine) | VLP based Trivalent Influenza vaccine | Vial | 0.5 ml |
| Rabies 3-dose vaccine | Recombinant nanoparticle based rabies G-Protein | Vial | 0.5 ml |

Future Product Pipe Line

- Rabies single dose Vaccine
- Quadrivalent Influenza Vaccine
- Varicella Zoster Vaccine
- Lung surfactant
- Peg - GCSF
- Monoclonal Antibodies

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|----------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Pandemic Influenza Vaccine | | | | | Q2/2016 |
| Seasonal Influenza Vaccine | | | | | Q3/2016 |
| Rabies 3 dose Vaccine | | | | | Q1/2018 |
| Peg - GCSF | | | | | |
| Lung surfactant | | | | | |
| Pancreatic Cancer Vaccine | | | | | |

Areas of Interest for Collaboration

- Development and adoption of new products and technologies through Partnerships
- Recombinant proteins and Monoclonal antibodies for therapeutic use
- Bacterial vaccines for commercialization by CPL Biologicals
- In licensing /out licensing

Contact Details

| | | | |
|------------------------|----------------------------|---------|-------------------------|
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Name of the company : **Center for Research and production of Vaccine and Biological (POLYVAC)**

Head of Institution : **Dr. Nguyen Dang Hien, Director**

Established : **24 January 1994**

Location : **Hanoi, Vietnam**

Overview of the company

Center for Research and Production of Vaccines and Biologicals (POLYVAC) was established in 1994 by the Ministry of Health of Vietnam with the task of carrying out experimental research, application of new technologies for production of Vaccine and biological products

From the end of 1962, the Division of Sabin's Oral Polio Vaccine Production of the NIHE was able to produce 2 million doses of oral polio vaccine for children of North Vietnam. With the great efforts of all professionals and staff, with unity and self sufficiency spirit in

order to fulfill the assigned tasks and duties, the quantity of vaccine produced by the Center has increased every year up to 40 million doses, meeting the national vaccination demand for eventual recognition in 2000 by WHO that Vietnam was polio free.

Besides the production of OPV, Center also conducts research and produces other vaccines such as: IPV, Rotavirus vaccines and Measles vaccines meets GMP/WHO with technology transferred by Japan. At present, Measles vaccine has been licensed. Since 2010, Vietnam will stop importing measles vaccine, while being active in preventing and controlling measles as recommended by WHO. The Rotavirus vaccine is has been licensed also from 2012.



Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--------------------|---|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| Oral polio vaccine | Tetravalent, live, attenuated oral vaccine | Vial | 2ml/20 doses/vial |
| Measles Vaccine | Freeze-dried, live attenuated vaccine. AIK-C Strain | Vial | 5ml/10 doses/vial |
| Rotavirus vaccine | Live attenuated oral vaccine. Human strain G1P[8] | Vial | 2ml/1 dose/vial |

Future Product Pipe Line

- Rubella
- Measles-Rubella combine vaccine
- Inactivated Polio vaccine
- bOPV

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| bOPV | | | | | Q4 /2015 |
| MR | | | | | Q4 /2016 |
| IPV | | | | | Q3 /2016 |

Areas of Interest for Collaboration

Contact Details

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Name of the company : **Changchun BCHT Biotechnology Co.**

Head of Institution : **Dr. Kong Wei**

Established : **March, 2004**

Location : **P.R. China**

Overview of the company

Changchun BCHT Biotechnology Co., a biopharmaceutical enterprise specializing in research, development, production and marketing of vaccines, biologics and peptide & chemical drugs, was established in March 2004.

BCHT has well-established innovative platform and extensive cooperative network. Each year the company invests considerable amount of money from the sales into R&D for innovative and qualified healthcare products, and the sum of R&D investment exceeds over 100 million RMB for the last few years. BCHT owns among the most advanced R&D laboratories and pilot plants for vaccines, gene engineering biologics and peptide drugs in China. The facilities, in area over 5000m² and with



more than 500 sets of instruments and equipments

As a fast-growing enterprise, BCHT not only focuses on the domestic market but also aims at exploring international market and business opportunity. The company has established successively trade cooperation with partners in areas such as Southeast Asia, the Middle East, Africa and South America etc. The registration for BCHT products has been undertaken in many countries. The company has taken part in government purchase in various countries and won the bidding successfully. BCHT has started to export its products to international market since 2009.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--|--|----------------------|--|
| Varicella Vaccine, Live | gelatin-free, validity for 36 months, lyophilized, Oka strain | Vial | 0.5ml/vial |
| Rabies Vaccine (Vero Cell) for Human Use | Produced with microcarrier bioreactor, with high potency not less than 2.5IU | Vial | 1.0ml/vial |

Future Product Pipe Line

- Acellular DTP Vaccine
- Live Attenuated InfluenzaVaccine
- HPV Vaccine
- AIDS Vaccine
- RSV Vaccine
- VZV Vaccine
- Cancer Vaccine
- EV71 Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|----------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Acellular DTP Vaccine | — | | | | 2016 |
| Live Attenuated InfluenzaVaccine | — | | | | 2016 |
| HPV Vaccine | — | | | | 2018 |
| AIDS Vaccine | | | — | | |
| RSV Vaccine | — | | | | |
| VZV Vaccine | — | | | | |
| Cancer Vaccine | — | | | | |
| EV71 Vaccine | — | | | | |

Areas of Interest for Collaboration

- Vaccines
- Peptide and chemical drugs
- Biologics
- Export

Contact Details

| | | | |
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中国生物技术集团
China National Biotec Group

Name of the company : **China National Biotec Group (CNBG)**

Head of Institution : **Dr. Yang Xiaoming**, President

Established : **1989**

Location : **P.R. China**

Overview of the company

CNBG is a state-owned company and one of the subsidiaries of China National Pharmaceutical Group Company (Sinopharm). It's the largest vaccine and blood products manufacturer and supplier in China and has been dedicated in the field of healthcare for nearly a century. CNBG consists of six institutes of biological products which are located in Beijing, Changchun, Chengdu, Lanzhou, Shanghai, Wuhan respectively. CNBG is also the major shareholder of Beijing Tiantan Biological Products Co., Ltd. and Beijing Vigoo Biological Co., Ltd.



CNBG has nearly 10000 employees, among which more than 4000 are scientists and technicians. CNBG owns dozens of achievements with independent intellectual properties rights and are currently operating more than a hundred SFDA cGMP certified manufacturing lines enabling to manufacture over 200 types of biological products for disease prevention, therapeutic and diagnostic use, also including all the vaccines for Chinese EPI program.

CNBG has successfully integrated a flow of R&D, manufacturing, marketing and post-marketing activities for biological products and has become one of the few companies in the world that could offer the widest range of vaccines with large quantities.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|----------------|---|----------------------|--|
| | Hepatitis B vaccine (yeast) | Ampoule | 5,10,20 µg |
| | BCG vaccine for intradermal injection | Ampoule | 0.25mg/5doses |
| | tOPV(dragee candy) | Pill | 1g |
| Shanliantai | Diphtheria Tetanus and Acellular Pertussis combines(DTaP), Adsorbed | Ampoule/vial | 0.5ml |
| | Measles, Mumps and Rubella combined vaccine, Live(M/R/MR/MM/MMR) | vial | 0.5ml |
| CD.JEV | Japanese Encephalitis Vaccine Live | vial | 0.5ml |
| Mengllingkang | Group A+C Meningococcal Polysaccharide vaccine | Ampoule | 100µg/dose,400µg/4doses |
| | Group A Meningococcal Polysaccharide vaccine | Ampoule | 150µg/5doses, 300µg/10doses |
| Havac | Live attenuated Hepatitis A vaccine | vial | 1ml |
| | Split Influenza virus vaccine | Injector/vial | 0.25ml, 0.5ml |
| Huiyikang | 23 Valent Pneumococcal Polysaccharide vaccine | vial | 0.5ml |
| Loutewei | Live Rotavirus Vaccine (oral) | vial | 3ml |
| Keerbei | Haemophilus Influenza type b conjugate vaccine | vial | 0.5ml |
| Shengdoushi | Freeze-dried Live attenuated Varicella vaccine | vial | 0.5ml |
| Wushengxinling | Rabies Vaccine for human use(vero cell) | vial | 0.5ml X 5vial /dose |
| | Yellow Fever Vaccine, Live | Ampoule | 0.3ml/6doses |
| | Typhoid Vi Polysaccharide vaccine | Ampoule | 1ml/2doses |
| Sentaibao | Tick- Borne Encephalitis Purified Vaccine | Ampoule | 1ml |
| | Human Albumin | vial | 2g,5g,10g,12.5g |
| | Human Immunoglobulin (pH4) Intravenous Injection | vial | 1.25g, 2.5g,5g |
| | Human Hepatitis B/Tetanus/ Rabies Immunoglobulin | vial | 100IU,200IU/ 250IU/ 200IU per vial |
| Hengli | Botulinum Toxin A for injection | vial | 5,10,20 µg |
| | Murine Monoclonal Antibody Anti-Human CD3 antigen of T Lymphocyte | vial | 5ml |

Future Product Pipe Line

| Product Name | Pre Clinical | IND Filed | Phase 1 | Clinical Phase 2 | Phase 3 | Expected launch date Quarter / Year |
|--|--------------|-----------|---------|------------------|---------|-------------------------------------|
| Beijing Strain Varicella Live Attenuated Vaccine | | | | | | |
| Ev71 Vaccine | | | | | | |
| Trivalent Reassortant Rotavirus Vaccine | | | | | | |
| Typhoid Vi Conjugate Vaccine | | | | | | |
| Group A+C Meningococcal Conjugate Vaccine | | | | | | |
| ACYW135 Meningococcal Polysaccharide Conjugate | | | | | | |
| Hexavalence Rotavirus Vaccine | | | | | | |
| 13-valent Pneumococcal Conjugate Vaccine | | | | | | |
| Recombinant Hexavalent Human Papillomavirus | | | | | | |
| slPV | | | | | | |
| Lyophilized Herpes Zoster Inactivated Vaccine | | | | | | |
| Measles, Mumps, Rubella and Varicella Combined Vaccine Live (MMRV) | | | | | | |
| DTaP+Hib | | | | | | |

Areas of Interest for Collaboration

- Large-scale Production Technology
- Combined Vaccine
- Cell line
- New Antigen
- Adjuvant

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Name of the company : **EuBiologics, Co. Ltd.**

Head of Institution : **Dr. Yeongok Baik**

Established : **March 10, 2010**

Location : **Republic of Korea**

Overview of the company

EuBiologics Co., Ltd. is a privately-held Korean biopharmaceutical company providing contract research and manufacturing services to domestic and international clients, in addition to building a portfolio of vaccines designed to improve global public health. The company was established in March 2010 with the objective of becoming a preferred strategic partner providing solutions for the development and manufacturing of biopharmaceutical products. EuBiologics's facilities are designed to manufacture a variety of mammalian cell and microbe-derived, protein-based therapeutics and antibodies. It provides customized services for various stages of product development, including cell line development, "Good Manufacturing Practice" (GMP) production, validation and regulatory support.



The company has also licensed the manufacturing technology necessary to produce an oral cholera vaccine from the International Vaccine Institute. In parallel with the development of its oral cholera vaccine product ("Euvichol"), EuBiologics is pursuing a number of other vaccines against diseases such as typhoid fever, HPV and norovirus.

The company's administrative headquarters is in Seoul and its manufacturing facilities are located in a biotechnology cluster in Chuncheon, Korea. For additional information about the company, please visit <http://www.eubiologics.com/ENG/>.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|----------------------|----------------------|--|
| Euvichol® | Oral Cholera Vaccine | Vial | 1.5 ml |

Future Product Pipe Line

- Typhoid Conjugate Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Typhoid conjugate vaccine | | | | | |

Areas of Interest for Collaboration

- Development of bacterial conjugate vaccines
- Development of combo vaccines
- New adjuvant development and application to bacterial vaccines

Contact Details

| | | | |
|------------------------|---|---------|-------------------------------|
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| Location | : Republic of Korea | Website | : www.eubiologics.com |
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Name of the company : **Finlay Institute**
 Head of Institution : **Dr. Concepción Campa Huergo**, President / General Director
 Established : **27th Ave No. 19805, La Coronela La Lisa, Habana City**
 Location : **Cuba**

Overview of the company

The FINLAY INSTITUTE, founded in 1991, is a scientific organization, dedicated to research, development, production and commercialization of human vaccines, internationally recognized in this field. This institution is a world leader in the field of meningococcal vaccine and other classic vaccines included in the Extended Immunization Program (EIP). VA-MENGOC-BC®, created and produced by the Finlay Institute was the first effective vaccine against serogroup B meningococcus.



The almost 1000 members of Finlay's staff constitute the largest capital of Finlay Institute and they have been recognized for their experience in the field of vaccines, more than 60% of them have high technical and professional qualification in the field of vaccine research, development, production and quality control. Many of them have more than 20 years of experience in these specialties, which guarantees the preparation and continuity of the projects with the inclusion of new talents graduated from the universities.

The facilities engaged in the production of vaccines and active pharmaceutical ingredients were designed, built, equipped and they are operated according to cGMP. Some products manufactured in these facilities have been prequalified by WHO.

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|-------------------------------|--|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| VA-MENGOC-BC® | Meningococcal BC vaccine | Vial | 0.5/2.5/5.0 ml |
| vax-MEN-AC® | AC Meningococcal polysaccharide vaccine | Vial | 5.0 ml |
| vax-MEN- ACW ₁₃₅ ® | Meningococcal ACW ₁₃₅ vaccine | Vial | 5.0 ml |
| vax-SPIRAL® | Trivalent leptospirosis vaccine | Vial | 0.5/5.0ml |
| vax-TyVi® | Vi polysaccharide typhoid vaccine | Vial | 0.5/5.0/10.0 ml |
| vax-TET® | Tetanus vaccine | Vial | 0.5/5.0/10.0 ml |
| VA-DIFTET® | Diphtheria-Tetanus vaccine for children | Vial | 0.5/5.0/10.0 ml |
| dT-vax® | Diphtheria-Tetanus vaccine for adults | Vial | 0.5/5.0/10.0 ml |
| DTP-vax® | Diphtheria- Tetanus-wPertussis vaccine | Vial | 0.5/5.0/10.0 ml |

Future Product Pipe Line

- Cholera vaccine (attenuated)
- Plain ACYW₁₃₅ meningococcal vaccine (porcine components free)
- AW₁₃₅ OMV vaccine
- Plain polysaccharide Vi Vaccine (porcine components free)
- Plain ACYW₁₃₅ X meningococcal vaccine
- AW₁₃₅ X OMV vaccine
- Conjugated Vi polysaccharide vaccines
- Conjugated Meningococcal ACYW₁₃₅ X vaccine
- Onco BCG

| Product Name | Pre | Clinical | Expected launch date | | |
|---|---------|----------|----------------------|---------|------|
| | Phase 1 | Phase 2 | Phase 3 | Quarter | Year |
| Cholera vaccine (attenuated) | | | | | |
| Plain ACYW ₁₃₅ meningococcal vaccine (porcine components free) | | | | | |
| AW ₁₃₅ OMV vaccine | | | | | |
| Plain polysaccharide Vi Vaccine (porcine components free) | | | | | |
| Plain ACYW ₁₃₅ X meningococcal vaccine | | | | | |
| AW ₁₃₅ X OMV vaccine | | | | | |
| Conjugated Vi polysaccharide vaccines | | | | | |
| Conjugated Meningococcal ACYW ₁₃₅ X vaccine | | | | | |
| Onco BCG | | | | | |

Areas of Interest for Collaboration

- Cooperated manufacturing
- Vaccine technologycal transfer
- Bacterial vaccines development based on outer membrane vesicles and based on capsule polysaccharides
- Application of novel adjuvants based on serogroup B Neisseria meningitidis outer membrane vesicles and proteoliposome-derived cochleate structure for vaccine development

Contact Details

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Website: **www.finlay.edu.cu**



Name of the company : **Fundação Ataulpho de Paiva**
Head of Institution : **Germano Gerhardt Filho**
Established : **1900**
Location : **Brazil**

Overview of the company

Fundação Ataulpho de Paiva (FAP) is a nonprofit, philanthropic private institution founded in 1900 and was named Brazilian League Against Tuberculosis. FAP has been promoting scientific advances and producing BCG Moreau Rio de Janeiro vaccine strain since 1930. FAP activities are based on production, research and social assistance programs. The Brazilian Ministry of Health has given competence to the Fundação for manufacturing, importing, exporting, stocking, distribution and repackaging of drugs, raw materials and dietary products.



BCG Moreau Rio de Janeiro is one of the four BCG vaccines considered as Reference Reagent by the World Health Organization (WHO). In 2012 the Moreau strain was studied by 16 laboratories from 13 countries certified by WHO.

The high immunogenicity and low side effects of the Brazilian vaccine have been demonstrated. The genome sequence and proteome analysis of the strain were also studied.

In 2006 IMUNO BCG® was launched in Brazil. It was developed from The BCG Moreau Rio de Janeiro strain. It is used for the treatment of superficial bladder cancer.

Currently, FAP has a new factory under construction to increase the production according to Good Manufacturing Practices (GMP). The institution is also researching for advances in the development of tuberculosis drugs.

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--------------|---------------|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| BCG | BCG Vaccine | Vial | 1mg/10 doses |
| IMUNO BCG | IMUNO Therapy | Vial | 40mg/Intrabladder |

Future Product Pipe Line

| Product Name | Pre Clinical | | Clinical | | Expected launch date Quarter / Year |
|--------------|--------------|---------|----------|---------|--|
| | Phase 1 | Phase 2 | Phase 3 | Phase 3 | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

Contact Details

Name of contact person : **Luiz Roberto Castello-Branco**

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email : **branco@bcgfap.com.br**

Website: **<http://www.fundacaoataulphodepaiva.com.br>**





Name of the company : **GreenCross Corporation**

Head of Institution : **Il-Sup Huh**

Established : **1967**

Location : **Republic of Korea**

Overview of the company

Green Cross Corporation (GCC) is one of the leading research based biomedical and pharmaceutical companies in Korea. The corporate headquarter and R&D facilities are located in Yongin. GCC has 3 production plants. Since its establishment in 1967, GCC has pioneered in the field of biopharmaceuticals, such as vaccines, plasma-derivatives, diagnostics, recombinant proteins and therapeutic antibodies.

GCC has been well known for the R&D and commercialization of 'Hepavax B', a world's biggest selling hepatitis B vaccine, 'Hantavax', a world's first epidemic hemorrhagic fever vaccine, and 'Suduvax', a world's second chicken pox vaccine. Starting from the nation's first Albumin production in 1971, it currently manufactures more than 12 plasma fractions including immunoglobulin, anti-hemophilic factors, and anti-thrombin factor. Manufacturing over 250 diagnostic reagents in 41 items, GCC is the leader in the nation's diagnostic reagent sector. Recent innovations include 'rhFVIII (GreenGene™)', a recombinant human coagulant factor VIII and a complete flu pipeline including seasonal flu vaccine (GCFLU®), H1N1 vaccine, avian flu vaccine as well as flu therapeutics, Peramivir. GCC is also pursuing opportunities in rare diseases developing therapies for Hunter syndrome (Hunterase™) which is world 2nd, and is designated as orphan drug by MFDS.



'Hantavax', a world's first epidemic hemorrhagic fever vaccine, and 'Suduvax', a world's second chicken pox vaccine. Starting from the nation's first Albumin production in 1971, it currently manufactures more than 12 plasma fractions including immunoglobulin, anti-hemophilic factors, and anti-thrombin factor. Manufacturing over 250 diagnostic reagents in 41 items, GCC is the leader in the nation's diagnostic reagent sector. Recent innovations include 'rhFVIII (GreenGene™)', a recombinant human coagulant factor VIII and a complete flu pipeline including seasonal flu vaccine (GCFLU®), H1N1 vaccine, avian flu vaccine as well as flu therapeutics, Peramivir. GCC is also pursuing opportunities in rare diseases developing therapies for Hunter syndrome (Hunterase™) which is world 2nd, and is designated as orphan drug by MFDS.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---|---|----------------------|--|
| GC FLU | Generic name: Split virion inactivated Influenza Vaccine A sterile suspension containing influenza virus which is propagated in the allantoic fluid of embryonic chicken egg. | pre-filled syringe | 0.5ml, 0.25ml |
| Japanese Encephalitis Vaccine- GCC inj. | Generic name: Inactivated Japanese Encephalitis Vaccine | Vial | 0.5ml, 1ml |
| Varicella Vaccine – GCC inj. | A sterile suspension containing Japanese Encephalitis virus of Nakayama strain inactivated by formalin | | |
| Varicella Vaccine – GCC inj. | Generic name: Live attenuated Varicella Vaccine A freeze-dried, live attenuated varicella-zoster vaccine. When reconstituted, the product is a transparent suspension of colorless or yellowish color | Vial | 0.7ml |

* More detailed information of GCC' full list of current product pipeline & future product pipeline is available at www.greencross.com.

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Avian Influenza vaccine | | | | | |
| Adult Td vaccine | | | | | |
| Anthrax vaccine | | | | | |
| Cell Culture Influenza vaccine | | | | | |
| Tdap vaccine | | | | | |
| Varicella Zoster vaccine | | | | | |

Areas of Interest for Collaboration

- Development and marketing partnership for novel vaccine products
- Co-development and commercialization of biologics for rare disease (Hunter syndrome, Hemophilia A)
- In-Licensing partnership for novel oncology or orphan products
- In-Licensing partnership for novel technology

Contact Details

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Website: **www.greencross.com**



Name of the company : **GreenSignal Bio Pharma Limited**

Head of Institution : **Dr. P. Murali (Managing Director)**

Established : **2008**

Country : **India**

Overview of the company

At a time when India is showing great progress as a destination for vaccine Research and Development, Manufacturing etc., GSBPL is all set to make the giant leap into the big league of vaccine manufacturing. GSBPL is now India's second and world's seventh largest BCG vaccine manufacturer. Vaccines manufactured by the GreenSignal Bio Pharma Limited are pre-qualified by the World Health Organization, Geneva and are being used in countries across the globe in their national immunization programs, saving millions of lives throughout the world. Our clientele include The Government of India, UNICEF, The Government of Nepal etc.



Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|-----------------|--|----------------------|--|
| BacilloVAX (tm) | BCG Vaccine Freeze Dried (Live Attenuated) | Vial | 1mg/vial |
| UROVAC | BCG for Immunotherapy Freeze Dried (Live Attenuated) | Vial | 40mg/vial |

Future Product Pipe Line

- Tetanus Vaccine
- MMR Vaccine
- Anti Snake Venom

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
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Areas of Interest for Collaboration

- R&D for BCG Vaccine
- Anti Venom Production

Contact Details

| | | | |
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| State | : Tamilnadu | email | : md@gsbpl.com |
| Location | : India | Website | : www.gsbpl.com |
| Postal code | : 600113 | | |



Name of the company : **Haffkine Bio-Pharmaceutical Corporation Limited**

Head of Institution : _____

Established : **1974**

Location : **India**

Overview of the company

The Haffkine Bio-Pharmaceutical Corporation was incorporated in 1974, aiming to take-up and expand the production of the erstwhile Haffkine Institute and to manufacture standard biological and non-biological products of public health importance. The Company established a subsidiary Company in 1977 viz. Haffkine Ajintha Pharmaceuticals Ltd at Jalgaon, producing tablets, capsules, powders, ointments etc.

Haffkine is engaged in the manufacture and supply of biological and non-biological products especially bacterial and viral vaccines, antisera, toxoids, injectables and pharmaceuticals in the pursuit of its mission of "Service to Mankind in the Health Care Sector".



The Company has contributed significantly towards the universal immunization and the Polio Eradication Programme, launched by the Government of India, ensuring timely supply of Oral Polio Vaccine (OPV) in sufficient quantity.

The Company has WHO-GMP prequalification for its Oral Polio Vaccines (mOPV1, bOPV(1&2) and tOPV) for supply to UNICEF.

Haffkine timely and adequately supplies all its products at affordable prices to all the Public Health Institutions of Government of Maharashtra.

Specific initiatives are underway for meeting the demands for the lifesaving drugs in other States, as well as in other countries. The Company plans to increase vaccine/antibodies production and diversify into the manufacture of newer vaccines of social relevance.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|-------------------------------|----------------------|--|
| tOPV | trivalent Oral Polio Vaccine | Vial | 2.2 ml (20 doses) |
| bOPV(1&3) | Bivalent Oral Polio Vaccine | Vial | 2.2 ml (20 doses) |
| mOPV(1) | Monovalent Oral Polio Vaccine | Vial | 2.2 ml (20 doses) |
| ASVS | Anti Snake Venom Serum | Vial | 10 ml |
| AScVS | Anti Scorpion Venom Serum | Vial | 10 ml |
| ARS | Anti Rabies Serum 300 IU/ml | Vial | 5 ml |
| ADS | Anti Diphtheria Serum 10000IU | Vial | 5 ml |
| ATS | Anti Tetanus Serum 1500IU/ml | Ampoule | 1 ml |

Future Product Pipe Line

- Tissue Culture Anti Rabies Vaccine (TCARV)
- AGGS

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
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Areas of Interest for Collaboration

- Measles
- Hep B
- HiB
- IPV
- Pneumococcal vaccine

Contact Details

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Name of the company : **HLL Biotech Limited**

Head of Institution : **Mr. R. P. Khandelwal, Chairman**
Mr. Raman K Ramachandran,
Director and Chief Executive Officer

Established : **2012**

Country : **India**

Overview of the company

HLL Biotech Limited (HBL) is a 100% subsidiary of HLL Lifecare Limited (HLL), under the Ministry of Health and Family Welfare, Government of India (GoI). As mandated by GoI, an Integrated Vaccines Complex (IVC) is being established by HBL in Chennai, India for manufacturing various vaccines required for immunization programme.

The objective of HBL is to manufacture and supply quality vaccines at an affordable price to support the immunization programme. The Integrated Vaccines Complex project is in the commissioning & validation phase to start the manufacturing of various vaccines. IVC has been designed and engineered as per the latest GMP guidelines to meet international quality requirements.



In the mean time HBL has started manufacturing and marketing of "HIVAC-B" (Hepatitis B) and "PENTAHIL" (DPT-HepB-Hib) vaccines. The other vaccines are in various phases of development for manufacturing at IVC.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|--|-----------------------|-------------------------------------|
| HIVAC B | Hepatitis B vaccine ; recombinant | Vial (Liquid) | 0.5/1.0/5.0/10.0 |
| PENTAHIL | Liquid Pentavalent – Diphtheria, whole cell Pertussis, Tetanus, Hepatitis B, Haemophilus influenzae type b | Vial (Liquid) | 0.5/5.0 |

Future Product Pipe Line

- Rabies vaccine
- BCG vaccine
- Measles vaccine
- Measles- Rubella vaccine
- Japanese encephalitis vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
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Areas of Interest for Collaboration

- Technology transfer & process development
- Bulk antigen supply
- Collaborative research and development of new generation vaccine
- Vaccine export
- Designing, engineering and construction of cGMP compliant vaccine facility projects
- WHO pre-qualification

Contact Details

| | | | |
|------------------------|---|---------|--|
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| Location | : India | Website | : www.hllbiotech.com |
| Postal code | : 600113 | | |



Name of the company : **Incepta Vaccine Ltd**

Head of Institution : **Mr. Abdul Muktadir**

Established : **2009**

Country : **Bangladesh**

Overview of the company

Incepta Vaccine Limited (IVL), a sister concern of Bangladesh Leading Pharmaceutical company, Incepta Pharmaceuticals Ltd started its Journey in 2009 with the objective to provide quality affordable vaccines to Bangladesh as well as globe. In last seven years of its journey, IVL is able create a huge impact on Vaccine world and has let least developed countries to dream of having their own vaccine production plants to cater their own need as well as the global need. The yearly capacity of IVL is 180 million single dose.



IVL started its collaboration with certain International organizations and the first product through this collaboration is developed and is under last Phase of clinical trials. The product, oral Cholera Vaccine was developed with support from International Vaccine institute, Korea and IVL has capacity to produce around 36 million doses of OCV.

IVL has planned to produce all the available vaccine presently in world and some new generation vaccines and to achieve its dream it has set up separate Fill Finish, Bacterial Bulk antigen, Viral Bulk Antigen, Bacterial and Viral Research and Development facilities. These facilities are

equipped with the latest line of equipment and well trained manpower in biological field.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|------------------|--|-----------------------|---|
| Hepa B Adult | r- DNA Recombinant Hepatitis B Vaccine for adult | Vial | 1.0 ml (Single Dose) |
| Hepa B Pediatric | r- DNA Recombinant Hepatitis B Vaccine for adult | Vial | 1.0 ml (Single Dose) |
| Ravix-VC | Vero Cell based Rabies Vaccine | Vial | Lyophilized(1.0 ml) Single Dose |
| Ingovax ACWY | <i>Neisseria meningitides</i> Group A,C, Y and W135 Polysaccharide Vaccine | Vial | Lyophilized(0.5 ml) Single Dose; Lyophilized(5.0 ml) Ten Doses |
| Influvax | Seasonal Influenzae Vaccine | Vial | 0.5 ml (Single Dose) |
| Vaxitet | Adsorbed Tetanus Vaccine | Vial/Ampoule | 0.5 ml (Single Dose) 5.0 ml (Ten Doses) |
| Rubavax-M | Measles and Rubella Vaccine | Vial | Lyophilized(0.5 ml) Single Dose |
| Vaxphoid | Typhoid Polysaccharide Vaccine | Vial | 0.5 ml (Single dose) |
| Vaxitet-IG | Tetanus Antitoxin (Equine) | Vial | 1ml (Each ml more than 3000 IU) |

| | | | |
|-----------|----------------------------------|------|----------------------------------|
| Rabix-IG | Rabies immunoglobulin | Vial | 5 ml(Each ml more than 1500 IU) |
| Antivenom | Polyvalent Snake venom antiserum | Vial | 10 ml (Lyophilized) |
| Protet-IG | Human Tetanus Immunoglobulin | Vial | 1 ml (Each ml more than 250 IU) |

Future Product Pipe Line

- Varicella Vaccine
- 23 Valent Pneumococcal Polysaccharide Vaccine
- 13 Valent Pneumococcal Conjugate Vaccine
- Human Papilloma Vaccine
- Rota Virus Vaccine
- IVIG
- Bivalent Oral Cholera Vaccine
- Typhoid Conjugate Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|-------------------------------------|------------------------------|----------------------------------|---------|------------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Varicella Vaccine | | | | | Q4/2016 |
| Pneumococcal Polysaccharide Vaccine | | | | | Q1/2017 |
| Pneumococcal Conjugate Vaccine | To Be started Jan, 2017 | | | | Q3/2018 |
| Human Papilloma Virus Vaccine | To Be started March, 2017 | | | | Q3/2018 |
| Rota Virus Vaccine | Under Development | | | | Q1/2019 |
| IVIG | | | | | Q4/2017 |
| Bi Valent Oral Cholera Vaccine | | | | Undergoing | Q1/2018 |
| Typhoid Conjugate Vaccine | | To be started by Nov, 2018 | | | Q3/2018 |

Areas of Interest for Collaboration

- Conjugation Technologies
- Bulk antigen supplies
- Development of Rota Virus Vaccine
- Any other new Generation Vaccines & Biological

Contact Details

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Name of the company : **Indian Immunologicals Limited**

Head of Institution : **Dr.K.Anand Kumar, Managing Director**

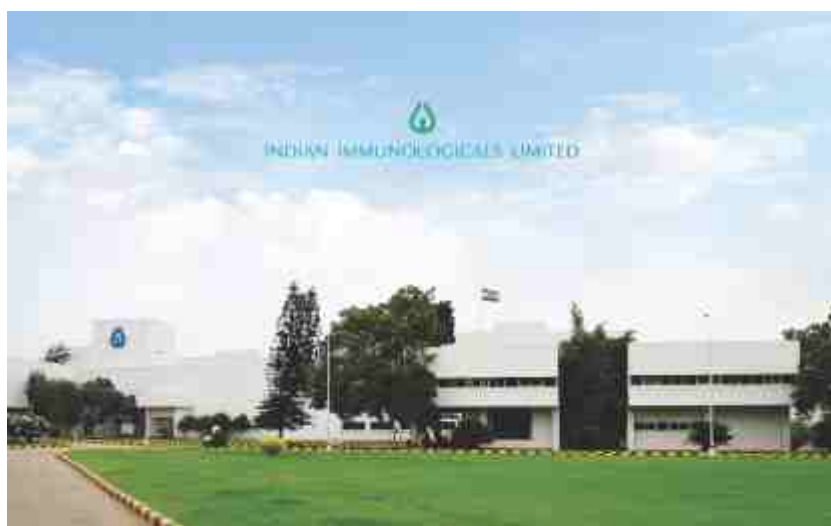
Established : **1982**

Country : **India**

Overview of the company

National Dairy Development Board (NDDB) set up Indian Immunologicals Limited in 1982. IIL's veterinary and human vaccine manufacturing facilities at Hyderabad and Ooty in India are among the largest vaccine producing plants in the world.

IIL is a major player in the human vaccine market in India, focusing on the paediatric and rabies segment with its flagship product "Abhayrab". IIL is also a major supplier of vaccines to India's large Universal Immunization Programme.



IIL research efforts are directed at developing frontier technologies in biologicals, diagnostics and vaccines. Vaccines for tropical diseases which are of little interest to western countries, but very relevant for a country like India are a major focus of research. IIL has research collaborations with several reputed national and international institutes including NIH, CDC, GALVMED, Pirbright Institute etc.

IIL exports its products to more than forty countries across the world with customer focus in Middle East, Asia Pacific region, Africa and CIS countries.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|---|--|-------------------------------------|
| Abhayrab | Vero cell culture Rabies vaccine | Freeze dried vial with diluent ampoule | 0.5 ml and 1 ml |
| Elovac B | Recombinant Hepatitis B vaccine | Vial | 0.5 ml, 1 ml, 5 ml and 10 ml |
| Abhay TAG | Diphtheria, Pertussis and Tetanus vaccine | Vial | 0.5 ml and 5 ml |
| Abhay DAG | Diphtheria and Tetanus vaccine | Vial | 0.5 ml and 5 ml |
| Abahy TOX | Tetanus vaccine | Vial | 0.5 ml and 5 ml |
| Abhay RIG | Equine Rabies immunoglobulins | vial | 5 ml |

Future Product Pipe Line

| Product Name | Pre Clinical | | Clinical | | | Expected launch date Quarter / Year |
|--------------------------------|--------------|---------|----------|--|--|--|
| | Phase 1 | Phase 2 | Phase 3 | | | |
| Pentavalent vaccine (DPTH+HiB) | | | | | | Q1/2017 |
| Japanese Encephalitis vaccine | | Ongoing | | | | Q3/2018 |
| Hepatitis A | | | | | | Q3/2018 |
| MR | In progress | | | | | Q2/2019 |
| Typhoid Conjugate | In progress | | | | | Q3/2019 |
| Chikungunya vaccine | In progress | | | | | Q1/2020 |
| Dengue | In progress | | | | | Q1/2021 |

Areas of Interest for Collaboration

- IPV vaccine technology
- Varicella vaccine technology
- Rotavirus vaccine technology

Contact Details

| | | | |
|------------------------|--|---------|----------------------------|
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| Address | : Indian Immunologicals Limited, Rakshapuram, Gachibowli Post | Mobile | : +91 96663 39987 |
| | | Fax | : +91-40-23005958 |
| City | : Hyderabad | email | : anandkumar@indimmune.com |
| State | : Telengana | Website | : www.indimmune.com |
| Location | : India | | |
| Postal code | : 500 032 | | |



Name of the company : **Instituto Biológico Argentino S.A.I.C**

Head of Institution :

Established :

Country : **Argentina**

Overview of the company

INSTITUTO BIOLÓGICO ARGENTINO S.A.I.C. BIOL is a private Argentinian company established in 1908. Since our origins, Biological products are a key factor in our development strategy. Currently, our core business is the development and manufacture of injectables, semi-solids and high-quality biological products.

BIOL manufactures, promotes and sells its own pharmaceutical and other licensed products from prestigious foreign companies. BIOL has a portfolio of vaccines, antitoxins and antivenoms registered and sold in Argentina, Bolivia, Paraguay, Perú, República Dominicana, Nicaragua, Honduras, Guatemala and Panama.



In addition, Biol holds agreements with different countries to develop and produce specific, tailor-made snake antivenoms for different regions: Central America, South America, Amazon Region and the United States. These products are not only for humans but also for veterinary use. In order to manufacture these products, BIOL has a segregated special unit in compliance with international standards.

Furthermore, BIOL has a highly motivated and experienced team in the biological field, knowledge in production of bacterial vaccines, expertise in quality control of biological

products and a broad and consolidate experience in collaborative international projects.

BIOL´s main goal is to help improve people´s quality of life providing effective and affordable drugs.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---|-------------|----------------------|--|
| TT Vaccine | | | |
| dTa Vaccine | | | |
| Polyvalent Snake Antivenom South America | | | |
| Polyvalent Snake Antivenom Central America | | | |
| Polyvalent Snake Antivenom (USA) Veterinary use | | | |
| Tetanus Antitoxins 3000 UI / 5000UI | | | |

Future Product Pipe Line

- Polyvalent Snake Antivenom Amazonic Region
- Polyvalent Snake Antivenom for Africa

| Product Name | Pre Clinical | | Clinical | | Expected launch date Quarter / Year |
|--------------|--------------|---------|----------|--|--|
| | Phase 1 | Phase 2 | Phase 3 | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

- Tecnology Transfer
- Vaccine Co-Development
- Overseas Registration and Distribution
- Development of novel therapeutics
- Combined Vaccines
- New Antigen Long term partnership In / Out-licensing opportunities Development & Process Innovation
- Purification of antivenoms

Contact Details

| | | | |
|------------------------|--|---------|----------------------------|
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| City | : Buenos Aires | Fax | : |
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| Postal code | : 1027 | | |



Name of the company : **Institute of Vaccines & Medical Biologicals (IVAC)**

Head of Institution : **Dr. Le Van Be**

Established : **October, 2012**

Location : **Vietnam**

Overview of the company

On November 23rd , 1978, the Ministry of Health made the decision to establish Institute of vaccines and biological substances (changed to INSTITUTE OF VACCINES AND MEDICAL BIOLOGICALS – IVAC from 2006) with functions and responsibilities as following:

- To plan and carry out the production of vaccines and serum, mainly to supply the Expanded Program on Immunization in Vietnam (EPI), and the others for prevention and treatment of diseases.
- To do research and apply technological advances in production and development of vaccines, serum and other biological substances.
- To co-operate with organizations in the country and abroad in the research and production of vaccines, serum and other biological substances, in order to expand production and raise their quality.



- To provide training to our staffs, to manage the allocated budget and state-owned property. Step by step to control the products and approach self - sustainability about outlay.

IVAC consists of 2 establishments:

- Nha Trang establishment, with an area of 3,946m2.
 - o Main establishment of IVAC
 - o Produce vaccines and medical biologicals
 - o Conduct scientific and applied research
- Suối Dầu breeding farm - with an area of 126 hectare, 22 kms from the Southern of Nha Trang
 - o breed testing animals serving research and quality control
 - o Raise horses for producing crude sera
 - o Produce food for cattle, microorganism fertilizer

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------------------|---|----------------------|--|
| BCG vaccine | Freeze dried vaccine against tuberculosis | Ampoule | 10 doses/ampoule |
| DPT vaccine | Combination vaccines against diphtheria, pertussis and tetanus | Vial | 10ml/vial |
| TT vaccine | vaccine composed of inactivated tetanus toxins - Multidose | Vial | 10ml/vial |
| TT vaccine | vaccine composed of inactivated tetanus toxins - monodose | Ampoule | 0.5ml/ampoule |
| SAT | Anti tetanus serum | Ampoule | 1500IU/ampoule 1000IU/ampoule |
| SAR | Equine rabies immune globulin | Vial | 1000IU/vial |
| SAV (SAV-naja ; SAV-tri) | Purified naja kaouthia antivenin and Purified trimeresurus albolabris antivenin | Vial | 1000 LD50/vial |
| Im.BCG | BCG immunotherapy of bladder cancer | Ampoule | 37.5mg/ampoule |
| Superferon | Interferon - 2b | Vial | 3000000IU/vial |

Future Product Pipe Line

- Pandemic Inactivated Monovalent Influenza Vacine (A/H5N1, A/H1N1, A/H7N9)
- Seasonal Splitted Trivalent Influenza Vaccine
- Acellular Pertussis Vaccine

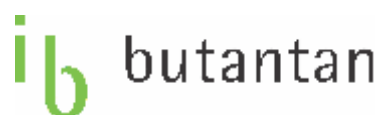
| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| A/H1N1 Influenza vaccine | | | | | |
| A/H5N1 Influenza vaccine | | | | | |
| A/H7N9 Influenza vaccine | | | | | |
| Seasonal Splitted Trivalent Influenza Vaccine | | | | | |

Areas of Interest for Collaboration

- Consolidate, upgrade , apply advanced technique for main products of IVAC:
acellular pertussis vaccine, anti-serum, combo vaccines based on frame of DTP...etc
- Build up Suoi Dau breeding farm to be suitable for its potential.
- Upgrade testing animals: species, food, workshop, technical service, etc.
- Establish a laboratory room to meet the Good Laboratory Practice (GLP) standards
- Build the personnel organization based on new mechanism, agreeing with national strategy on local vaccine production.
- Join, and associate with both domestic and international institutes in researching on new products.
- Enhance both the quality and quantity of existing vaccines to progress exporting vaccines to foreign markets.
- Consolidate and upgrade the Quality Management system.
- Biologics, ie mAb, biosimilar, recombinant protein drugs

Contact Details

| | | | |
|------------------------|------------------|---------|--------------------------------------|
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| State | : Khanh Hoa | email | : lekimhoa@dng.vnn.vn |
| Location | : Vietnam | Website | : www.ivac.com.vn |
| Postal code | : 084 | | |



Name of the company : **Instituto Butantan**

Head of Institution : **Jorge Kalil**

Established : **1901**

Location : **Brazil**

Overview of the company

Instituto Butantan is one of the most prestigious public scientific institutions in Brazil and internationally recognized for its outstanding biomedical research, production of immunobiologicals (vaccines and hyper immune sera) and diffusion of technical-scientific knowledge. The mission of the institution is to investigate, develop, manufacturer, and delivery high quality immunobiological products free of charge to the Brazilian population through the National Immunization Program / Ministry of Health. Instituto Butantan is currently responsible for the production of 40% of Brazil's sera and vaccines. In order to keep contributing with the Brazilian immunobiological self-sufficiency program and to improve nationally and internationally public health the Institute has strongly invested in internal R&D program, establishment of partnerships with national/international research institutions, and programs aiming at the incorporation of new technologies (Butantan and private companies partnerships). The Instituto Butantan has recently launched an internal preparation program aiming at the pre-qualification of its vaccines by World Health Organization. This initiative confirms the commitment of the Instituto to contribute not only to the Brazilian public health but also to the world.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|----------------------------|---|----------------------|--|
| Seasonal influenza vaccine | influenza trivalent vaccine (split and inactivated) | Vial | 5ml |
| DTP | diphtheria, tetanus and pertussis (cellular) adsorbed vaccine (DTP) | Vial | 5ml |
| dT | diphtheria y tetanus adsorbed vaccine (dT) - adults | Vial | 5ml |
| DT | diphtheria y tetanus adsorbed vaccine (DT) - pediatric | Vial | 5ml |
| Rabies | human rabies vaccine (inactivated) | Vial | 1ml |
| Hepatitis B | adsorbed hepatitis B vaccine (recombinant) | Vial | 5ml |
| HPV | recombinant | Vial | 0.5ml |

Future Product Pipe Line

- Tetravalent Dengue Vaccine
- Pertussis Low (cellular pertussis)
- Pentavalent Rotavirus Vaccine
- BCG-pertussis + HepB
- Onco-BCG (recombinant)
- Pneumococcal (cellular)
- 2nd Generation of Surfactant (porcine origin)
- Monoclonal antibodies
- dTap
- HPV (tetravalent)
- Hepatitis A
- Adjuvant Monophosphoryl Lipid A
- Adjuvant Silica

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Tetravalent dengue vaccine | | | | | 2017/2018 |
| Pertussis Low | | | | | 2020 |
| Pentavalent Rotavirus Vaccine | | | | | 2020 |
| BCG-pertussis + HepB | | | | | To be defined |
| Onco-BCG (recombinant) | | | | | |
| Pneumococcal (cellular) | | | | | To be defined |
| 2nd Generation of Surfactant (porcine origin) | | | | | To be defined |
| Monoclonal antibodies | Technology Transfer Program (Libbs) rituximabe – Phase III clinical trial – expected launch 2017 bevacizumabe – Phase I clinical trial completed – expected launch 2021 | | | | |
| dTap | Technology Transfer Program (dT from Butantan and ap from GSK) | | | | |
| Hepatitis A | Technology Transfer Program (MSD) | | | | |
| HPV | Technology Transfer Program (MSD) | | | | |
| Adjuvant Silica | | | | | To be defined |
| Adjuvant Monophosphoryl Lipid A | | | | | 2020 |

Areas of Interest for Collaboration

- Combo vaccines
- Adjuvants
- Clinical Trials

Contact Details

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 email :
 Website : **www.butantan.gov.br**



Name of the company : **Institute of Medical Biology, Chinese Academy of Medical Sciences**
 Head of Institution : **Dr. Li Qihan**
 Established : **1958**
 Country : **P.R. China**

Overview of the company

Institute of Medical Biology, Chinese Academy of Medical Sciences (IMBCAMS) was founded in 1958, and it integrates basic medical research with the development and production of biological products. It is mainly involved in basic and applied research in the following fields: medical virology, immunology, genetics, molecular epidemiology, experimental zoology using primates and large-scale production of vaccines as well as immunological and genetic engineering products.

IMBCAMS is the oldest and largest research and production base for a series of poliomyelitis and hepatitis A vaccines, which has made great contributions to the control and eradication of poliomyelitis and played an essential role in decreasing the incidence of hepatitis A in China.



Prior to the solid theoretical base, rich research accumulation and professional talent teams gradually developed in the past over 50 years, as "WHO Collaborative and Research Center on Enteroviruses", "International S&T Cooperation Base of Development and Industrialization for Infectious Disease Vaccine of China", "National Torch Plan Key High-Tech Enterprise", "National Engineering Research Center of Biological Product on Virus Diseases", IMBCAMS has accumulated a solid extensive basis for applied basic research and development of new products, and has established an independent innovation system for vaccine research and development covering the whole industry chain of lab scale, pre-clinical, middle-scale, clinical, large-scale and post marketing surveillance. According to requirements of national infectious disease prevention and control system,

the new vaccines of the first oral poliomyelitis vaccine (Dragee Candy) in China, the first Attenuated Hepatitis A Vaccine all over the world, the first liquid-filled Attenuated Hepatitis A Vaccine over the world, the first Inactivated Poliomyelitis Vaccine made from Sabin Strain and Inactivated Enterovirus Vaccine Type 71 (Human Diploid Cell) all over the world has been supplied by IMBCAMS, which make it become as one of the vaccine product cooperation to achieve the target of new vaccine development from "Chinese made" to "China creation".

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|---|-----------------------|-------------------------------------|
| | Oral Live Attenuated Poliomyelitis Vaccine in dragee candy | Pill | 1.0g |
| | Oral Live Attenuated Poliomyelitis Vaccine | Vial | 1.0ml |
| Weisairuiji | Hepatitis A (Live) Vaccine, Freeze-dried | Ampoule | 1.0ml |
| Aibiwei | Inactivated Poliomyelitis Vaccine Made From Sabin Strains | Ampoule | 0.5ml |
| | Enterovirus Type 71 Vaccine, Inactivated (Human Diploid cell) | Ampoule, Ayringe | 0.5ml |

Future Product Pipe Line

- Inactivated Influenza Virus Virolysis Vaccine
- Inactivated Japanese Encephalitis Purified Vaccine
- bOPV 1&3
- F-genotype Attenuated Mumps Vaccine
- Rabies Vaccine(Human Diploid cell)
- DTaP-sIPV Combined Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Inactivated Influenza Virus Virolysis Vaccine | | | | | 2016 |
| Inactivated Japanese Encephalitis Purified Vaccine | | | | | |
| bOPV 1&3 | | | | | |
| F-genotype Attenuated Mumps Vaccine | | | | | |
| Rabies Vaccine(Human Diploid cell) | | | | | |
| DTaP-sIPV Combined Vaccine | | | | | |

Areas of Interest for Collaboration

- Product export
- Vaccine development
- WHO pre-qualification

Contact Details

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Website : <http://www.imbcams.ac.cn>



Name of the company : **Laboratorios de Biológicos y Reactivos de México, S.A. de C.V. (BIRMEX)**

Head of Institution : **Luis Guillermo Ibarra Ponce de León**

Established : **in Mexico City since 1999. Birmex as an enterprise started in 1999 but, as part of the Ministry of Health, has over 100 years producing vaccines.**

Location : **Mexico**

Overview of the company

Birmex is a government-owned company that produces imports and commercializes vaccines, antivenoms and biological reagents.

Our personnel possess a vast expertise in biologics production, which combines with a stringent quality control of the production procedures. This expertise results in the successful updating of facilities, production procedures, and programs aimed to meet Good Manufacturing Practices as certified by the National Regulatory Agency.

Over the years, Birmex has evolved into a reliable guarantee of experience and know-how for its customers, incorporating into each product and service:

- The confidence of high quality
- The pledge of an end-to-end service with full tracking and control over shipments at all times, whether by land or air
- The security of on-time distribution to any point in the country - this because Birmex is the only laboratory that delivers to all Mexico's 32 states
- The innovation, competitiveness, honesty and integrity in each process focused on offering solutions that meet the customer's needs
- And finally, the assurance of being with a laboratory whose experience, market knowledge and degree of specialization today make it the leading vaccine manufacturer in Mexico and one of the three principal vaccine manufacturing countries in Latin America



Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------------|--|----------------------|--|
| tOPV | Trivalent Sabin Oral Polio Vaccine | Dropper | 2.0 ml (20 doses) |
| Td vaccine | Tetanus and Diphtheriattoxoids for adult | Vial | 5.0 ml (10 doses) |
| Snake Antivenom | Freeze-dried to be reconstituted with 10 mL of Water for Injection as diluent This serum is made with venoms from the species <i>Crotalus basiliscus</i> and <i>Bothrops asper</i> , and it has also cross-reaction against venoms of the genus <i>Agkistrodon</i> and <i>Sistrurus</i> | Vial | 10.0 ml (1 dose) |
| Scorpion Antivenom | Freeze-dried to be reconstituted with 5 mL of Water for Injection as diluent This serum is made with venoms from the genus <i>Centruroides</i> . | Vial | 5.0 ml (1 dose) |

Future Product Pipe Line

- Bivalent Oral Polio Vaccine (Types 1 and 3)
- DPwT with whole cell pertussis vaccine
- Tdpa with acelular pertussis vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Bivalent Oral Polio Vaccine (Types 1 and 3). | | | | | Q3 / 2016 |
| DPwT | | | | | Q4 / 2017 |
| Tdpa | | | | | Q4 / 2017 |

Areas of Interest for Collaboration

- Cell-culture based vaccines
- Scale-up process
- Plant design (industrial and pilot level)
- Technology transfer for vaccine production
- From bench to patient, vaccine development
- Rotavirus vaccine. Technology transfer
- Development and scaling up conjugated vaccines
- Characterization of snake venoms
- Characterization of scorpion venoms
- Purification of antivenoms

Contact Details

| | | | |
|------------------------|--|---------|--|
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| City | : Mexico City | Fax | : +52-55 5422 2881 |
| State | : D.F. | email | : svillasenor@birmex.gob.mx international@birmex.gob.mx |
| Location | : Mexico | Website | : www.birmex.gob.mx |
| Postal code | : 03600 | | |



Name of the company : **LG Life Sciences, Ltd.**

Head of Institution : **Il Jae JUNG**

Established : **1947**

Country : **Republic of Korea**

Overview of the company

LG Life Sciences(LGLS) has developed and commercialized an array of pharmaceuticals for human and animal applications over the years. Especially for vaccines, LGLS successfully developed hepatitis B vaccine (EUVAX B™ Inj.) which has been exported to more than 80 countries through UN-sponsored programs and represented the major portion of overseas sales. Further to hepatitis B vaccine, LGLS successfully developed tetravalent DTP-based combined vaccines, DTwP-HepB(Euforvac™ Inj.). It was approved by Korean Ministry of Food and Drug Safety in year 2008 and showed superior efficacy and safety. LGLS also developed a Hib vaccine(Euhib™ Inj.), as a component of pentavalent vaccine by reconstitution with

DTwP-HepB/Hib(Euforvac-Hib™ Inj.). In addition, LGLS developed a fully-liquid pentavalent vaccine(Eupenta™ Inj.), based on the accumulated technology and knowhow, for UN vaccine market. And year 2011, LGLS is selected by WHO as one of tech transfer recipient of sabin IPV. Based on this new technology, LGLS will continue to develop hexavalent and further combined vaccines. Through the long development history on vaccines LGLS accumulated a lot of experiences on vaccines and came to have very strong capability on vaccine development area. In the future, LGLS will remain a leader in life sciences and biotechnology-value added areas that are knowledge intensive.



Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|-------------------|--|-----------------------|-------------------------------------|
| Euvax B™Inj. | Recombinant Hepatitis B vaccine | Vial Liquid | 0.5/1.0/5.0 ml |
| Euforvac™Inj | Adsorbed diphtheria, tetanus, whole cell pertussis & hepatitis B combined vaccine | Vial Liquid | 0.5/1.0/5.0 ml |
| Euhib™Inj. | Haemophilus influenzae type b vaccine | Vial Lyophilized | 0.5/1.0 ml |
| Euforvac-Hib™Inj. | Adsorbed diphtheria, tetanus, whole cell pertussis, hepatitis B and Haemophilus influenzae type b combined vaccine | Vial Lyophilized | 0.5/1.0 ml |
| Eupenta™Inj. | Adsorbed diphtheria, tetanus, whole cell pertussis, hepatitis B and Haemophilus influenzae type b combined vaccine | Vial Liquid | 0.5/5.0 ml |

* More detailed information of LGLS' full list of current product pipeline & future product pipeline is available at www.lgls.com.

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| LBVC (Polio virus vaccine) | | | | | |
| LBVD (Hexavalent vaccine) | | | | | |
| LBVE (Pneumococcal conjugate vaccine) | | | | | |
| SR-hGH (Weekly hGH) | | | | | |
| Eutropin Pen (Daily hGH) | | | | | |
| Espogen (BEPO albumin) | | | | | |
| LBEC0101 (Etanercept biosimilar) | | | | | |
| LBAL (Adalimumab biosimilar) | | | | | |
| LBDE (Darbepoetin-a biosimilar) | | | | | |
| Besifovir (DNA Pol.inhibitor) | | | | | |
| Lc280126 (Necrosis inhibitor) | | | | | |
| LC54AID3 (GPR120 agonist) | | | | | |
| CAR T-cell | | | | | |
| ZemiMet (DPP IV inhibitor/Metformin) | | | | | |
| ZemiSU (DPP IV inhibitor/SU) | | | | | |
| ZemiStatin (DPP IV inhibitor/Statin) | | | | | |
| ZemiARB(DPP IV inhibitor/ARB) | | | | | |
| YVOIRE soft plus (Cross-linked HA/ lidocaine) | | | | | |
| YVOIRE intensive plus (Cross-linked HA/ lidocaine) | | | | | |

BEPO: Bioreactor EPO, **DPP:** Dipeptidyl Pepidase, **SU** : sulfonylurea, **ARB** : Angiotensin Receptor Blocker, **HA** : Hyaluronic acid

Areas of Interest for Collaboration

- Development and marketing partnership for novel vaccine products
- Marketing alliance for biologics, SR-hGH, EPO, rFSH, etc.
- Global marketing partnership or distributionship for HA based products
- Global marketing partnership or distributionship for Fative®

Contact Details

| | | | |
|------------------------|---|---------|---------------------|
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| Location | : Republic of Korea | Website | : www.lgls.com |
| Postal code | : 03184 | | |



Name of the company : **Liaoning Cheng Da Biotechnology Co., Ltd (CDBIO)**

Head of Institution : **Ms. Zhang XiaoHua**, General Manager

Established : **2002**

Location : **P.R. China**

Overview of the company

CDBIO is an integrated biotechnology company engaged in R&D, manufacturing, distribution and sales of vaccine products. In 2002, the company introduced world's leading technology platform---"bioreactor and micro-carrier cell culture technology"---, from which the company has developed rabies vaccine and Japanese Encephalitis vaccine.

Until now, our products have been distributed in almost all over the China as well as more than 15 countries in international markets. According to the statistic data, totally more than 100 million doses of rabies vaccine for human use have been used for rabies prophylaxis during the last 7 years and there is no failure case reported after finishing the whole vaccination schedule. The inactivated Japanese Encephalitis vaccine (Vero cell) has also been launched since 2008 and now it has become a better choice for JE prevention. In 2012, the company built a new manufacturing facility following to the Current GMP regulations and it will come into use in 2013.



Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---|---|----------------------|---|
| Rabies vaccine for human use | <ul style="list-style-type: none"> Perfusion Culture by Bioreactor and micro-carrier system Chromatographically Purified High Immunogenicity (>4.5IU/dose before lot release) High safety Preservative free, antibiotics free | Vial | Liquid solution: 0.5ml/dose Lyophilized powder 0.5ml/dose after reconstitution |
| Rabies vaccine for veterinary use | <ul style="list-style-type: none"> Perfusion Culture by Bioreactor and micro-carrier system High Immunogenicity (2.0IU/dose) High safety Antibiotics free | Vial | 1ml/vial for one dose 5ml/vial for 5 doses |
| Inactivated Japanese Encephalitis Vaccine for human use | <ul style="list-style-type: none"> Perfusion Culture by Bioreactor and micro-carrier system Chromatographically Purified Preservative free, antibiotics free High safety High Immunogenicity | Vial | Liquid solution: 0.5ml/dose Lyophilized powder 0.5ml/dose after reconstitution |

Future Product Pipe Line

- Hemorrhagic Fever with Renal Syndrome Bivalent Vaccine
- Combined bacterial vaccine

| Product Name | Pre Clinical | | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|---------|----------|---------|--|--|
| | | Phase 1 | Phase 2 | Phase 3 | | |
| Hemorrhagic Fever with Renal Syndrome Bivalent Vaccine | | | | | | 2014 |
| Combined bacterial vaccine | | | | | | 2017 |

Areas of Interest for Collaboration

- We are seeking partnerships with large pharmaceutical company who are interested in developing biotech and vaccine products
- In-licensing Opportunity in China

Contact Details

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Name of the company : **Medigen Vaccine Biologics Co.**

Head of Institution : **Dr. Stanley Chang (CEO/Chairman)**

Established : **October, 2012**

Country : **Taiwan**

Overview of the company

Medigen Vaccine Biologics Co. (hereinafter as MVC), founded in 2012, is devoted to develop innovative cell-based vaccine with state-of-the-art cell-culture technologies and cost-effective production using single-use systems. MVC has successfully established cell-based platforms for pandemic influenza H5N1, H7N9, and Enterovirus 71 vaccines. Currently, H7N9 and Enterovirus 71 vaccines are at the clinical development. Besides vaccine, MVC also extends the cell-based technology to develop biosimilar, anti-Respiratory Syncytial Virus (RSV) mAb by working with UCAB and other partners.

Furthermore, to ensure adequate supply of high quality vaccines, MVC is establishing a first PIC/S GMP certified cell-based vaccine plant in Taiwan. The

construction is completed and pilot production is likely to be initiated in 2017. The factory is equipped with two production lines, one for viral vaccines and another for mAb. During pandemic, MVC's factory is able to manufacture sufficient vaccines by switching mAb production line to manufacture viral vaccines using adjustable HVAC system. The designed production capacity is up to ten million doses per year.

contribute to the human health care in the near future.

MVC commits not only to supply the vaccine for Taiwan people, but also provide vaccines globally to

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--------------|-------------|----------------------|--|
| | | | |

Future Product Pipe Line

- Enterovirus 71 (EV71) Vaccine
- Pandemic Influenza Vaccine
- Seasonal Influenza Vaccine
- Anti-RSV mAb

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Ev71 Vaccine | | | | | |
| H7N9 Influenza vaccine | | | | | |
| Anti-RSV mAb | | | | | |

Areas of Interest for Collaboration

- Joint development for novel cell-based vaccines & biologics
- Marketing and distribution of vaccines & biologics
- In licensing / out licensing
- Biologics, ie mAb, biosimilar, recombinant protein drugs

Contact Details

| | | | |
|------------------------|--|---------|-----------------------|
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Name of the company : **National Administration of Laboratories & Institutes of Health Anlis "Dr. Carlos G. Malbrán"**

Head of Institution : **Dr. Gustavo Ríos**

Established : **1996**

Location : **Argentina**

Overview of the company

The National Administration of Laboratories and Institutes of Health ANLIS "Dr. Carlos G. Malbrán" agency dependent of The Secretary of Policy, Regulation and Institutes of the Ministry of Health of Argentine Nation nucleates eleven institutes and centers located in different places in our country (all of them of recognized performance in their areas of competence).

Its fundamental function understands in science and technical policy associated with various substantive aspects of actions in public health. The Institutional Plan recognizes 6 strategic areas:

1. Research and Technological Development in Health.
2. Health Surveillance and outbreak control.
3. Prevention and Control Disease Programs.
- 4. Production and Supply of Health Strategic Inputs.**
5. Education and Training of Health Human Resources.
6. Information and Communication in Health.

Planned activities in the Production and Supply of Strategic Inputs Area will focus to achieve more equitable access (regarding availability and prices) to technologies and essential medical supplies, with guaranteed quality, safety, effectiveness and cost effectiveness and to promote reasonable and effective use according to their costs.

The global products portfolio of interest includes: viral and bacterial vaccines, immunotherapies (antidotes and antitoxins sera), diagnosis kits and reagents, inputs for reference and proficiency tests sera panels and reference biological standards, biopharmaceuticals and strategic medicines and laboratory animals.



Current Product Pipeline

| Product Name | | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--|--|---|----------------------|--|
| Candid # 1 | | Virus Junin live attenuated vaccine against Argentine Hemorrhagic Fever | 10 doses Vial | Lyophilized |
| Viper venom antiserum, Bothrops bivalent | | | vial | 10.0 ml |
| Viper venom antiserum, Bothrops tetravalent | | | vial | 10.0 ml |
| Viper venom antiserum, Crotalus durissus terrificus | | | vial | 10.0 ml |
| Viper venom antiserum, Micrurus pyrrhocryptus | | | vial | 5.0 ml |
| Spider venom antiserum, Loxosceles SP | | | vial | 5.0 ml |
| Spider venom antiserum, Latrodectus SP | | | vial | 2.0 ml |
| Scorpion venom antiserum, Tityus trivitattus | | | vial | 2.0 ml |
| Rabies vaccine, FP, human use | | | vial | 2.0 ml |
| Rabies vaccine, FP, veterinary use | | | vial (multidose) | 50.0 ml |
| Tuberculin purified protein derivate, human use | | | vial (multidose) | 3.0 ml |
| BCG for immunotherapy | | | vial | 5.0 ml |
| Serotyping antisera (Enterobacteriaceae & Vibrio cholerae) | | | vial | Miscellaneous volumes |
| Tetanus toxoid – API | | | N/A | N/A |
| Diphtheria toxoid – API | | | N/A | N/A |
| Pertussis (cellular component) – API | | | N/A | N/A |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|----------|---------|---------|---|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Yellow Fever Vaccine | | | | | Implementation of a Quality System training to staff ANLIS in Argentina November 2011 |
| dT vaccine – Diphteria and Tetanus vaccine | | | | | Adaptation, renovation and design of the productive areas of the components or API's (used to produce DTP and dT) and acquisition of necessary equipment and instrumentation Execution of the work of the filling and packaging plant and submission a file that includes all equipment and instruments needed in the plant. 2011 |
| DTP vaccine – Diphteria, Tetanus and Pertussis vaccine | | | | | |
| Pentavalent vaccine DTP-HB/Hib | | | | | In technology transference management |

Kits for diagnosis use: Rotavirus, *Neisseria meningitidis*, *Streptococcus pneumoniae*, Toxoplasmosis, Chagas, Leptospirosis, Brucellosis, etc.

Areas of Interest for Collaboration

- Production technologies
- Quality Control
- Quality Assurance
- Management
- Good Manufacturing Practices
- Clinical trials
- Ethical issues
- Vaccine development
- Vaccine patents politics
- Regulatory issues

Contact Details

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Name of the company : **National Institute of Infectious Diseases and Vaccinology**

Head of Institution : **Ching-Len Liao, Ph.D**

Established : **May 2011**

Location : **Taiwan**

Overview of the company

The National Institute of Infectious Diseases and Vaccinology (NIIDV) is a mission-oriented R&D department within the National Health Research Institutes (NHRI) in Taiwan, a non-profit organization established by Taiwan government.

NIIDV was formally established in May 2011 by merging the Division of Infectious Diseases and the Vaccine R&D Center. NIIDV conducts researches on important infectious diseases and advocates for government actions and recommendations to solve healthcare problems. International collaborations are part of NIIDV's endeavors to deal with global infectious diseases. NIIDV has state-of-the-art technology, cGMP facility and expertise to develop novel vaccines and immunotherapeutics.



NIIDV has completed the phase I clinical trial of the MDCK cell-based H5N1 flu vaccines in 2010 and transferred to a local biotech company. The influenza vaccine (H5N1, H7N9) is prepared for phase II trials in 2013. The Vero cell-based EV71 vaccine was also developed and the phase I clinical trial has been completed in 2012. The meningococcal B recombinant vaccine is developed and going into phase I clinical trial. To meet national health needs, the BCG vaccine is manufacturing and going to be launched in 2015.

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--------------|---|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| BCG | Technology and product transfer from Taiwan CDC to be launched in 2015. Live freeze - dried BCG vaccine, 30 doses | Ampoule | 3 ml |
| Antivenin | Technology and product transfer from Taiwan CDC to be launched in 2016. | Vial | 30 ml |
| ProVEU | Cell-based flu vaccine | Vial | 3 ml |
| Ev71vac | Cell-based flu EV71 vaccine | Vial | 3 ml |
| MenBvac | Liporprotein-based meningococcal vaccine | Vial | 3 ml |

Future Product Pipe Line

- Adenovector-based RSV vaccine
 - HPV therapeutic vaccine
 - Recombinant BCG
 - Dengue vaccine
- Influenza vaccine (H7N9, etc.)
 - Bivalent vaccine against hand-mouth-foot disease

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Adenovector-based RSV vaccine | | | | | |
| HPV therapeutic vaccine | | | | | |
| Recombinant BCG | | | | | |
| Dengue vaccine | | | | | |
| Influenza vaccine (H7N9, etc.) | | | | | |
| Bivalent vaccine against hand-mouth-foot disease | | | | | |

Areas of Interest for Collaboration

- Technology transfer cell-based viral vaccines and lipoprotein technology
- Service contract for GMP Filling and packaging
- Co-development of new vaccines
- Global marketing partnership/distributorship
- Licensing out of vaccine products and platform technology

Contact Details

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Name of the company : **Panacea Biotec Limited (PBL)**
 Head of Institution : **Dr. Rajesh Jain, Ph.D.**
 Established : **February 1984**
 Country : **India**

Overview of the company

Panacea Biotec is India's leading research based biotechnology company and has been amongst top 40 biotechnology companies (BioSpectrum – ABLE Survey, July 2014) and amongst top 50 pharmaceutical companies (AIOCD AWACS – MAT May 2016) in India.

Panacea Biotec has been among the leading suppliers of vaccines to UNICEF and Government of India's with a focus on critical pediatric vaccines. The company has developed some vaccines first time in the world including fully liquid pentavalent vaccine DTP-HepB-Hib, Bivalent Oral Polio vaccine, Monovalent OPVs Type 1 & 3. Vaccine Formulation and filling facility is located at Baddi in Himachal Pradesh. This plant has been approved by WHO.



Pharmaceuticals business is focused on Organ Transplantation, Renal Diseases, Diabetes, Oncology, Pain Management, Orthopedics and Gastro-Intestinal. The company has collaborations and tie-ups with leading national and international organizations. The company's state of the art manufacturing facilities comply with US-FDA, UK-MHRA, SA-MCC and WHO-CGMP standards. The company is R&D focused with 4 state-of-the-art R&D centers focusing on Vaccines, Biosimilars, Chemistry and biotechnology based Drug Discovery, Novel Drug Delivery Systems and "High Barrier to Entry" Generics. The company has over 2850 employees including over 125 highly skilled scientists.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|--|---|----------------------|--|
| EasyFiveTT* | DTP-HepB-Hib | Vial PFS | 0.5 ml, 5.0 ml 0.5 ml |
| EasyFourTT* | DTP-Hib | PFS & Vial | 0.5 ml |
| Oral Polio Vaccine | Bivalent Poliomyelitis vaccine (Type1 & 3) | Vial | 2.0 ml |
| Enivac HB | Recombinant Hepatitis B | Vial | 0.5 ml 5.0 ml |
| NovoHib | Haemophilus Type b conjugate (PRP-TT) | PFS & Vial | 0.5 ml |
| Key Pharmaceutical Products (Therapeutic category-wise): | | | |
| 1. Organ Transplant & Nephrology | | | |
| PANGRAF | Tacrolimus Hard Gelatin Capsule | Capsule | 0.25, 0.5, 1, 2 & 5 |
| PANIMUN BIORAL | Cyclosporine Soft Gelatin Capsule | Capsule | 25mg & 50mg |
| EVERGRAF | Everolimus | Tablet | 0.25mg & 0.5mg |
| MYCEPT | Mycophenolate Mofetil | Capsule/Tablet | 250mg, 500mg & 750mg |
| MYCEPT-S 180 | Mycophenolic Acid (as Sodium Salt) | Tablet | 180mg & 360mg |
| SevBait 400 | Sevelamer Carbonate | Tablet | 400mg |
| 2. Diabetes | | | |
| Glizid-M | Gliclazide & Metformin Hydrochloride | Tablet | 80mg + 500mg |
| Glizid | Gliclazide | Tablet | 40mg, 80mg |
| Glizid MR | Gliclazide | Tablet | 30mg & 60mg |
| Tenepan | Teneliglipitin | Tablet | 20mg |
| Tenepan M 500 | Teneliglipitin Hydrobromide Hydrate eq. to Teneliglipitin 20mg and Metformin Hydrochloride IP 500mg | Tablet | |
| 3. Gastro-Intestinal | | | |
| Sitcom | Euphorbia Prostrata Extract | Tablet | 100mg |
| Livoluk | Lactulose 10 g (each 15 ml) | Bottle | 100 ML |
| 4. Gastro-Intestinal | | | |
| CABAPAN | Cabazitaxel Injection | Vial | 60mg/1.5ml (1 dose) |
| PacliAll | Paclitaxel | Vial | (100mg) 1 dose vial |
| PexeTrust 100 | Pemetrexed | Vial | (100mg) 1 dose vial |
| GemTrust 200 | Gemcitabine Hydrochloride IP eq. to Gemcitabine 200mg | Vial | 1 dose vial |
| 5. Pain & Inflammation | | | |
| Willgo P | Aceclofenac IP 100mg/ Paracetamol IP 325mg | Tablet | 10 Tabs. |
| Kondro OD | Glucosamine Sulphate Potassium Chloride | Tablet | 1500mg (10 Tabs.) |
| Nimulid-MD | Nimesulide BP 100mg | Tablet (Dispersible) | 15 Tabs. |

Please log-on to www.panaceabiotec.com for complete range of products.

Overall, PBL currently has more than 90 brands in its pharmaceutical wing spanning across various therapeutic segments and in different countries (Regulated as well as Non-regulated markets).

Future Product Pipe Line

- Pharmaceuticals

New Products:

- Currently 6 ANDA products with high business potential (in Anti-cancer, CNS, CVS therapy area) are under registration in US which are expected to be commercialized in the coming years. In addition a range of generic products (with high market potential, high developmental barrier and less potential competition) are under development from Immuno-suppression, anti-cancer, ESRD therapies.

Alliance for high end Anti-Cancer Products

- The company has entered into a strategic alliance with Apotex Inc. for development, license and supply of two anti-cancer generic products based on nano-particle & liposomal technology for US, Canada, Australia and New Zealand markets.

Areas of Interest for Collaboration

- Human Papiloma Virus (HPV) Vaccine
- Rotavirus Vaccine

Contact Details

| | | | |
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Name of the company : **Production & Research Complex for Pasteur Institute of IRAN**

Head of Institution : **Dr.Hooman Kaghazian, Ph.D.,**

Established : **March 1987**

Location : **IR of Iran**

Overview of the company

Located in the heart of Tehran, Pasteur Institute of Iran (PII) has been providing health care services and related products to the public since 1920. The initial goal of PII establishment was to recognize and combat domestic infectious diseases. PII now is the home of different departments and research centers such as Bacteriology, Biotechnology, Genetics, Parasitology & Mycology, Clinics, and Virology. PII has also been involved in manufacturing a number of parenteral fluids for hospital use since its establishment.

To meet increasing domestic demand PII manufacturing part moved to a new place in outskirts of Tehran in 1988 and assigned as “Production and Research Complex (PRC)”. In the new place PII was successfully able to develop its manufactures to varieties of product. Currently PRC productions fall

into three categories:

Vaccines: such as Hepatitis B, BCG, and Anti-Rabies (for veterinary use).

Recombinant Protein Preparations: such as Erythropoietin, Interferon alfa 2b, and Streptokinase. Parenteral fluids.

Therapeutics such as intravesical BCG.

Diagnostic materials used in Medical Laboratories.

Equipped with state-of-the-art machineries PRC now is one of the leading companies in manufacturing biopharmaceuticals in the country and the region.

PRC also benefits from quality assurance (QA) and quality control (QC) departments with close cooperation of the National Regulatory Authorities (NRA).

PRC vision is to employ innovative technologies in order to expand its GMP-oriented products to meet domestic demands as well as looking into foreign markets. In order to commercialize products outside the country, PRC recently applied for pre-qualification status through WHO for its vaccines.



Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---------------------------------|-------------------------------------|----------------------|--|
| Hepatitis B Vaccine (Rec.) | Liquid | Vial | 5.0 (10 doses) |
| BCG Vaccine | Lyophilized | Vial | 2.0 (20 doses) |
| Rabies Vaccine (for animal use) | Liquid | Vial | 1.0 (1 dose) |
| BCG Intravesical (Immune) | Liquid | Vial | 120mg/3ml |
| Erythropoietin (Rec.) | Liquid | Vial | 1.0 (2000 I.U.) |
| Parenteral Solutions | liquid | Vial | 50 |
| Diagnostic Kits | Antigens & Antiserums Culture | Vial | |
| Experimental Animals | Mice- Rabbits- Guinea Pigs- Hamster | | |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|----------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Interferon Alfa 2b | | | | | 2014 |
| Streptokinase (Rec.) | | | | | 2014 |
| Rabies vaccine (for Human use) | | | | | 2015 |
| MMR Vaccine | | | | | |
| Opaque Agents | | | | | |
| Sodium Bicarbonate | | | | | |
| Pentavalent Vaccine | | | | | |
| Pentaperazole | | | | | |
| Anti Venoms (Snakes & Scorpions) | | | | | |
| Hepatitis B (New Version) | | | | | 2015 |
| Immunological Diagnostic Kits | | | | | |
| Parenteral Amino Acids Solutions | | | | | |
| PEG Interferon | | | | | |
| VZV Vaccine | | | | | |
| Influenza Vaccine | | | | | |
| Meningitis Vaccine | | | | | |
| Pneumococcal Vaccine | | | | | |
| Hepatitis E Vaccine | | | | | |
| Malaria Vaccine | | | | | |

Areas of Interest for Collaboration

- Recombinant Biopharmaceuticals
- Cell-Culture-Based Vaccines
- Co Operated Manufacturing
- Vaccine Technology Transfer
- Quality Control, Quality Assurance

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Name of the company : **Queen Saovabha Memorial Institute,
The Thai Red Cross Society**

Head of Institution : **Prof. Dr. Visith Sitprija, Director**
Prof. Dr. Sumana Khomvilai, Deputy Director

Established : **1922**

Country : **Thailand**

Overview of the company

The Queen Saovabha Memorial Institute (QSMI), founded in 1922, has its mission in producing vaccines eg. BCG vaccines, rabies vaccines and sera preparations eg. snake antivenoms, rabies immunoglobulin and conducting research on snakes, snake venoms, rabies and related topics.

QSMI established a snake farm in 1923 and a horse farm in 1956. QSMI has been manufacturing snake antivenoms since 1923, BCG vaccine since 1953 and rabies immunoglobulins since 2002. Work on snakes, snake antivenoms, rabies and equine rabies immunoglobulin has gained international reputation for many decades. The horse farm has more than 500 horses. The Institute is recognized by WHO as WHO Collaborating Centres in both rabies and snake work. The activities of Queen Saovabha Memorial Institute cover 3 main areas of service, research and production as follows.

I. Service

1. Treatment of animal bites and vaccination against rabies 2. Animal clinic and Rabies diagnosis 3. Travelers immunization clinic 4. Other immunization 5. Snake farm for public 6. Joint collaborative projects in clinical and laboratory diagnosis of human and animals suspect of being rabid, route of rabies vaccine administration (with ministry of public health, livestock department, WHO and US communicable disease center).



II. Research and Development

1. Research for improvement of product and diagnosis 2. Biomedical and clinical research in areas of Rabies, snakes, snake venoms and horses 3. Collaboration and joint research projects Between QSMI and other educational and research institute

4. Future plan: New tuberculosis vaccine

III. Production

- Biological products as indicated in Current Product Pipeline
- Antidote for the NHSO (National Health Security office) eg. Sodium nitrite, Sodium thiosulfate, Methylene blue injection and Diphenhydramine injection

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--|--|-----------------------|-------------------------------------|
| BCG Vaccine | lyophilized product of 10 doses per vial | vial | 0.5 ml |
| Rabies vaccine (TRCS Speeda) | lyophilized product of 1doses per vial | vial | 0.5 ml |
| Equine rabies immunoglobulins (TRCS ERIG) | injection liquid of 1,000 IU per vial | vial | 0.5 ml |
| Antivenoms for poisonous snake bite - King Cobra antivenin (<i>Ophiophagus Hannah</i>) - Cobra antivenin (<i>Naja Kaouthia</i>) - Banded Krait antivenin (<i>Bungarus fasciatus</i>) - Malayan Pit Viper antivenin (<i>Calloselasma rhodostoma</i>) - Russell's Viper antivenin (<i>Daboia russelli siamensis</i>) - Green Pit Viper antivenin (<i>Trimeresurus albolabris</i>) - Malayan Krait antivenin (<i>Bungarus candidus</i>) - Neuro polyvalent antivenin (<i>Naja kaouthia</i> , <i>Ophiophagus hannah</i> , <i>Bangarus fasciatus</i> and <i>Bangarus candidus</i>) - Haemato polyvalent antivenin (<i>Calloselasma rhodostoma</i> , <i>Trimeresurus albolabris</i> , <i>Daboia russelli siamensis</i>) | All are lyophilized products in 20 ml. vial with solvent of Water for Injection 10 ml. | vial | 10.0 ml |

Future Product Pipe Line

(imported bulk vaccine for formulation and filling) : Estimate launch in year 2017

- **Influenza** : injection liquid of 0.5 ml per vial per 1 dose
- **JE vaccines** : lyophilized product of 0.5 ml per vial
- **Td vaccines** : injection liquid suspension of 2 ml per vial of 2 doses

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|-------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Influenza vaccine | | | | | 2017 |
| JE vaccines | | | | | 2017 |
| Td vaccines | | | | | 2017 |

Areas of Interest for Collaboration

- New TB vaccine

Contact Details

| | | | |
|------------------------|---|---------|---|
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Name of the company : **Razi Vaccine & Serum Research Institute**

Head of Institution : **Dr. Hamid Kohram**

Established : **1925**

Location : **IR of Iran**

Overview of the company

Razi Vaccine and Serum Research Institute is known as one of the oldest and most reputed scientific centers in the Middle East. This institute began its activities in the year 1925 with producing vaccine against Rinderpest, which at the time had caused large casualties in the cattle population of the country. At present Razi institute is producing more than 60 biological products including human and veterinary vaccines, sera, etc.

Razi institute is governed by a Board of Trustees. The local costumers of the institute products are the Ministry of Health and the Veterinary Organization of the country. The institute is headquartered in the city of Karaj and has six branches in the cities Mashahad, Ahwaz, Shiraz, Marand, Kerman and Arak. These branches are mainly involved in the production of poultry and other veterinary vaccines.



The Institute is considered a center of research, training and technical assistance for vaccine production and is ready for providing its services and fulfilling the vaccine needs of other developing and neighboring countries.

The objectives are:

- ✦ Research & Production of Medical Vaccines and Antisera
- ✦ Research & Diagnosis of Veterinary and Poultry Diseases
- ✦ Research & Production of Veterinary and Poultry Vaccines
- ✦ Research and Diagnosis of Zoonotic Diseases
- ✦ Biotechnology Research
- ✦ Education & Training

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--|---------------------------------------|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| Trivalent DTP,dT, Td | Diphtheria-Tetanus-Pertussis Vaccines | Vial | 14 doses/7ml |
| Measles | Live Attenuated vaccine (Lyo.) | Vial | 10 doses/5 ml |
| Mumps, Rubella | Live Attenuated vaccines (Lyo.) | Vial | 1 dose |
| bOPV | Live Attenuated vaccine | Flakon | 15 doses/1.5 ml |
| Polio (type 1,2, and3) | Live Attenuated vaccine | Flakon | 15 doses/1.5ml |
| MMR , MR, MM | Live Attenuated vaccines (Lyo.) | Vial | 10 doses/5 ml |
| Polyvalent Snake Antivenom | Antivenom | Ampoule | 10 , 5 |
| Polyvalent Scorpion Antivenom | Antivenom | Ampoule | 5 |
| Anti-Tetanus Serum | Anti Toxin | Ampoule | 2 |
| Anti-Diphtheria Serum | Anti Toxin | Vial | 5 |
| Anthrax | Live vaccine | Bottle | 100 |
| Blackleg (Cattle) | Inactivated vaccine | Bottle | 250 |
| Polyvalent Enterotoxaemia (Sheep & Goat) | Inactivated vaccine | Bottle | 250 |
| Brucella Melitansis Strain Rev. 1 | Live vaccine (Lyo.) | Vial | 100 |
| Brucella Abortus Strain IRIBA | Live vaccine (Lyo.) | Vial | 20 |
| Agalactia& Pasterulosis (Cattle & Buffalo) | Inactivated vaccines | Bottle | 100 |
| Tetanus (Horse) | vaccine | Vial | 20 |
| Rinderpest, Sheep Pox, Goat pox | Live vaccines (Lyo.) | Vial | 100 |
| Foot and Mouth Disease (FMD) | Inactivated vaccine | Bottle | 250 |
| Bovine Theileriosis | Attenuated vaccine | Vial | 12 |
| Fowl Cholera | Inactivated vaccine | Bottle | 100 |
| Fowl Pox | Live vaccine (Lyo.) | Vial | 1000 , 2000 |
| Infectious Laryngotracheitis | Live vaccine (Lyo.) | Vial | 1000 , 2000 |
| Fowl Infectious Bronchitis H-120& H-52 | Live vaccines (Lyo.) | Vial | 1000 , 2000 |
| Newcastle La Sota, Newcastle B1 | Live vaccines (Lyo.) | Vial | 1000 , 2000,4000 |
| Inactivated Influenza (oil-emulsion) H9N2 | Inactivated vaccine | Bottle | 250 |
| Inactivated Newcastle (oil-emulsion) V4 | Inactivated vaccine | Bottle | 250 |
| Combined oil-emulsion H9N2 & V4 | Inactivated vaccine | Bottle | 250 |
| Combined IB (H-120) / ND (B1) | Live vaccine | Vial | 2000 |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Peste des Petits Ruminants (PPR) | | | | | Licensed & Produced |
| Combined Live IB (H-120) / ND (La Sota) | | | | | |
| Infectious Bursal Disease (IBD) | | | | | |
| Human Influenza Vaccine | | | | | |
| RS12 | | | | | |
| Hib vaccine | | | | | |
| Tetavalent DTP-Hib | | | | | |
| Pentavalent DTP-Hib-HepB | | | | | |
| IPV | | | | | |

Areas of Interest for Collaboration

- Training in the Fields of Production and QC Tests
- Production of New Recombinant Vaccines(Human, Poultry and Veterinary)

Contact Details

| | | | |
|------------------------|--|---------|--------------------|
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Name of the company : **SERUM INSTITUTE OF INDIA PVT. LTD.,**

Head of Institution : **DR. CYRUS S. POONAWALLA**
Chairman & Managing Director

Established : **1966**

Country : **India**

Overview of the company

Serum Institute of India Pvt. Ltd. (SII) founded in 1966 by a true visionary Dr. Cyrus Poonawalla, CMD, is the World's No. 1 producer of DTP & MMR group of vaccines, Hib, BCG, Hep B Vaccines and India's No. 1 Biotechnology Company manufacturing highly specialized life-saving biologicals. It is also one of the largest suppliers of WHO prequalified vaccines to U.N. Agencies catering to over 170 countries; and also recognized as the reliable largest source of high quality & affordable vaccines and biologicals. It is estimated that about 65% of the children in the world receive at least one vaccine produced by SII. SII made its first international acquisition by acquiring Bilthoven Biologicals, a bioengineering and pharmaceutical

company from The Netherlands Govt. SII is the only Indian company to feature in the top five vaccine companies (in terms of volume) among global giants GlaxoSmithKline, Merck, Novartis and Sanofi.



SII products are also registered in several countries including Switzerland. This impact has been large enough to make global agencies such as WHO, GAVI, PATH, NIH, NVI/RIVM, CBER/USFDA & BMGF to work with SII to develop newer vaccines. The production facilities of SII are the best in terms of equipment and human resources; essential to ensure high quality of vaccines. The manufacturing facilities conform to WHO cGMP requirements and till date SII's 23 vaccines are prequalified by WHO/Geneva.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|---------------|--|-----------------------|--|
| TT * | Tetanus Vaccine | Ampoule | Single dose (0.5 ml) |
| DT * | Diphtheria and Tetanus Vaccine (Paediatrics) | Vial | 10 doses (5 ml) |
| Td * | Diphtheria and Tetanus Vaccine for Adults & Adolescents | Vial | 20 doses (10 ml) |
| DTP * | Diphtheria-Tetanus-Pertussis Vaccine | Ampoule | 1 & 2 doses (0.5/1 ml) |
| | | Vial | 10 & 20 doses (5/10 ml) |
| Q-Vac * | DTP and Hepatitis B Vaccine (Adsorbed) | Ampoule/Vial | 0.5ml & 1 ml / 5 ml |
| Quadravax * | DTP + Hib Vaccine (Lyo. & Liquid) | Vial | 0.5ml, 1 & 5 ml |
| Pentavalent * | DTP Hepatitis B + Hib Vaccine (Lyo. & Liquid) | Vial | 0.5ml, 1, 5 & 10 ml |
| BCG * | BCG Vaccine | Vial | 5ml, 10ml/ 10, 20 doses |
| Measles * | Measles Vaccine Live (Lyo.) | Vial | 1, 2, 5 & 10 doses (0.5ml per dose) |
| Rubella * | Rubella Vaccine Live (Lyo.) | | |
| MR * | Measles and Rubella Vaccine Live (Lyo.) | | |
| MMR * | Measles, Mumps and Rubella Vaccine Live (Lyo.) | | |
| Rabies * | Rabies Vaccine | Vial/Ampoule | 1 ml / 1 dose |
| IPV | Inactivated Poliomyelitis Vaccine | Prefilled Syringe | 0.5ml/dose |
| Nasovac-S * | Seasonal Influenza Vaccine, Live Attenuated (Freeze-dried) | Vial/Ampoule | 1 dose (0.5ml per dose) |
| Hep B * | Recombinant Hepatitis B Vaccine (Pediatric & Adult) | Vial/Ampoule | 0.5ml & 1ml |
| | | Vial | 5 & 10 ml |
| Hib * | Haemophilus type b Conjugate Vaccine (Lyo.) | Vial | 1 dose |
| MenAfriVac * | Meningococcal A Conjugate Vaccine (Lyo.) 5mcg / | Vial | 10 doses |
| bOPV * | Bivalent Oral Poliomyelitis Vaccine types 1 & 3 | Vial | 10 & 20 doses |
| ATS | Tetanus Antitoxin | Ampoule/Vial | 1 ml / 5 ml |
| ADS | Diphtheria Antitoxin | Vial | 10 ml |
| ASVS | Anti-Snake Venom Serum (Lyo.) Asia & Central Africa | Vial | 10 ml |
| ARS | Anti-Rabies Serum | Vial | 5 ml |
| Onco-BCG | BCG for Immunotherapy | Vial | 40mg/vial |

* Products prequalified by WHO for supplies to U.N. Agencies

Future Product Pipe Line

- Rabies vaccine (Verorab)
- Rabies Monoclonal Antibody (RMab)
- DTaP vaccine
- Pneumococcal Polysaccharide Vaccine
- Measles Vaccine (Dry Powder)
- Aerosol Measles vaccine
- Rotavirus Vaccine (Lyophilized)
- Pentavalent Meningococcal Conjugate Vaccine (ACYWX)
- Human Papiloma Virus Vaccine (HPV)
- Recombinant BCG (rBCG) Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |

Areas of Interest for Collaboration

- Newer Vaccines development
- Biosimilars
- Monoclonal antibodies

Contact Details

| | | | |
|------------------------|--|---------|--------------------------------|
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Name of the company : **Sinergium Biotech**
Head of Institution : **Alejandro Gil (CEO)**
Established : **2009**
Location : **Argentina**

Overview of the company

Sinergium Biotech is an Argentinean pharmaceutical company specialized in the research, development, production and commercialization of high-complexity vaccines and biological products.

The production complex, boasts a capacity of 20 million doses in a surface of 20,000m². Its equipment and production process standards are compatible with the highest international Good Manufacturing Practices (GMP), following the guidelines of U.S. regulatory agency Food & Drug Administration (FDA) and the European Medicines Agency (EMA).

In 2009, Sinergium Biotech entered into a technological transfer agreement for the production of seasonal and pandemic influenza virus vaccines. The production of influenza virus vaccines makes Argentina a member of the small group of countries

relying on their own technology to produce flu vaccine and thus to face possible pandemics.

In 2011, Sinergium Biotech formed an agreement with an international company for the technological transfer as well as the national production and provision of the pneumococcal conjugate vaccine. Sinergium Biotech also formulates packages and prepares for shipment active principles of monoclonal antibodies and others biological products.

Sinergium Biotech represents a great opportunity for international vaccine producers to develop their production capacity in Argentina and therefore set foot and expand their participation in the South-American region markets.



Current Product Pipeline

| Product Name | Description | Type | Presentation |
|-------------------------|---|-------------------|--------------------------|
| | | Vial/ Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| Seasonal Flu | Anti-influenza Vaccine (inactivated surface antigens) | Prefilled Syringe | 0.5 ml |
| Pediatric Seasonal Flu | Anti-influenza Vaccine (inactivated surface antigens) | Prefilled Syringe | 0.25 ml |
| Adjuvanted Seasonal Flu | Anti-influenza Vaccine (adjuvant MF59C1) | Prefilled Syringe | 0.5 ml |
| Pneumococcal Vaccine | Pneumococcal polysaccharide conjugate vaccine (13-valent, adsorbed) | Prefilled Syringe | 0.5 ml |
| HPV Vaccine | Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) | Prefilled Syringe | 0.5 ml |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

- Technology Transfer for vaccine production
- Vaccine and biopharmaceutical Co-development
- Long Term partnership
- Product development and Process Innovation
- Marketing and Distribution of vaccines in Argentina and South America
- Vaccine joint development and R&D collaborations
- New Antigens and adjuvants
- Contract Manufacturing
- Fill and secondary packaging

Contact Details

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Name of the company : **Sinovac Biotech Ltd.**

Head of Institution : **Weidong Yin**

Established : **2001**

Location : **P.R. China**

Overview of the company

Sinovac Biotech Ltd. is a profitable biopharmaceutical company headquartered in Beijing, China. The Company focuses on the research, development, manufacture and commercialization of vaccines that protect against human infectious diseases including hepatitis A, seasonal influenza, H5N1 (bird flu) pandemic influenza and H1N1 influenza. Sinovac received approval in 2009 for its H1N1 influenza vaccine, PANFLU.1 and has commenced fulfilling orders from the Chinese Central Government pursuant to the government stockpiling program. Sinovac was the first company worldwide to receive approval for H1N1 influenza vaccine.



Sinovac has a robust pipeline of new vaccine products under development. The Company is currently developing vaccines for Enterovirus 71 (EV 71), Pneumococcal Conjugate Vaccine, Hib, and Meningitis. Its wholly owned subsidiary, Tangshan Yian, is conducting field trials for an independently developed inactivated animal rabies vaccine.

Sinovac is open and flexible to discuss any possible collaborative opportunity of international business and has established a clear path to partnering. We are seeking the partners who share the same value as ours

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--------------|---------------------------------------|--------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| Healive® | Inactivated Hepatitis A Vaccine | Vial | 0.5, 1.0 ml |
| Anflu | Split Influenza Vaccine | Vial | 0.25, 0.5 ml |
| Bilive | Hepatitis A and B Combined Vaccine | Vial | 0.5, 1.0 ml |
| PANFLU.1 | H1N1 Influenza Vaccine (Split virion) | Ampoule | 0.5, 1.0 ml |
| H5N1 | H5N1 Influenza Vaccine (Split virion) | Ampoule | 0.5, 1.0 ml |
| H5N1 | H5N1 Influenza Vaccine (Whole virion) | Ampoule | 0.5, 1.0 ml |
| Mumps | Live attenuated vaccine | Vial | 0.5ml |

Future Product Pipe Line

- EV71 Vaccine
- Human Rabies Vaccine
- Pneumococcal Conjugate Vaccine
- Pneumococcal Polysaccharide Vaccine
- Hib Vaccine
- DTaP Vaccine
- HepB Vaccine
- Rotavirus Vaccine
- CA16 Vaccine
- Varicella Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|-------------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| EV71 Vaccine | | | | | Q2/2014 |
| Human Rabies Vaccine | | | | | Q2/2016 |
| Pneumococcal Conjugate Vaccine | | | | | Q2/2016 |
| Pneumococcal Polysaccharide Vaccine | | | | | 2016 |
| Hib Vaccine | | | | | Q2/2017 |
| DTaP Vaccine | | | | | Q2/2017 |
| HepB Vaccine | | | | | Q2/2017 |
| Rotavirus Vaccine | | | | | Q3/2017 |
| CA16 Vaccine | | | | | Q3/2017 |
| Varicella Vaccine | | | | | Q2/2016 |

Areas of Interest for Collaboration

- Oversea distribution
- R&D cooperation
- International business
- FDA registration for vaccines
- Adjuvant technology
- Micro-carrier technology
- Novel vaccine technology

Contact Details

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Postal code: **100085**

Website: **www.sinovac.com**



Name of the company : **SK Chemicals Co. Ltd. (Life Science Biz Division)**

Head of Institution : **Dr. Mahnhoon Park (CEO)**

Established : **1969**

Country : **Republic of Korea**

Overview of the company

SK Chemicals is a member of SK Group, the third largest conglomerate in South Korea. Since establishment in 1969, SK Chemicals has expanded into one of the top pharmaceutical companies in Korea with 1,700 employees and an annual revenue of \$1.4 Billion USD (2014), offering a variety of products from pharmaceuticals to biologics.

SK Chemicals Life Science Business has been dedicated to bringing innovative solutions, being the first Korean company to domestically develop a new chemical entity (SUNPLA, 1999), and a new herbal drug (JOINS, 2001). A new biological product (long acting recombinant factor VIII) for the treatment of hemophilia which SK out-licensed to CSL was approved by the FDA



in 2016. Since entering the vaccine industry in 2002, SK became a top vaccine distributor and manufacturer in Korea. It has strongly focused on its R&D capabilities, obtaining fundamental proprietary technologies to meet global needs. Moreover, recent collaboration with multinational entities such as International Vaccine Institute (IVI), and Sanofi Pasteur has proved SK Chemicals' promising capabilities on vaccine business and technologies.

In 2013, SK Chemicals completed construction of a new GMP-compliant vaccine manufacturing facility with cutting-edge, single-use, modular production system, which allows highly efficient production. SK Chemicals' new vaccine products are manufactured at this site.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|----------------|--|-----------------------|-------------------------------------|
| SKYCellflu TIV | Cell-culture Trivalent Seasonal Influenza Vaccine | Prefilled Syringe | 0.25/0.5ml |
| SKYCellflu TIV | Cell-culture Quadrivalent Seasonal Influenza Vaccine | Prefilled Syringe | 0.5ml |
| SK Td | Adsorbed Tetanus-Diphtheria Combined Toxoid Vaccine (only for domestic market) | Prefilled Syringe | 0.5ml |
| Hepamun PFS | Recombinant Hepatitis B Vaccine (only for domestic market) | Prefilled Syringe | 0.5ml |
| FirstHib | Haemophilus Influenzae Type B Conjugated Vaccine (only for domestic market) | Prefilled Syringe | 0.5ml |

Future Product Pipe Line

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Pneumococcal Conjugate Vaccine | | | | | |
| Zoster Vaccine | | | | | |
| Varicella Vaccine | | | | | |
| Typhoid Conjugate Vaccine | | | | | |
| NBP613 | | | | | |
| NBP615 | | | | | |

* The programs in preclinical stages are not disclosed.

Areas of Interest for Collaboration

- Global partnership / distributorship
- Licensing-in / out of vaccine products & platform technology
- Co-development of current and new vaccines
- Contract research / manufacturing of various viral and bacterial vaccine products

Contact Details

| | | | |
|------------------------|--|---------|-----------------------------|
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| Location | : Republic of Korea | Website | : www.skchemicals.com |
| Postal code | : 13494 | | |



Name of the company : **The Biovac Institute**

Head of Institution : **Dr Morena Makhoana**

Established : **2003**

Country : **South Africa**

Overview of the company

The Biovac Institute (Biovac) is a Public Private Partnership between the South African government and a private consortium. It was formed in 2003 to re-establish domestic manufacture of human vaccines, and, ultimately, to enable regional response to vaccine-preventable diseases and regional epidemics.

Biovac is the largest distributor of vaccines in South Africa, and imports, labels, packages and distributes vaccines for the South African public sector. Biovac also imports and distributes vaccines to Southern African Development Community (SADC) countries.



It is Biovac's vision is to be a Centre of Excellence rooted in Africa for the development and manufacture of affordable quality vaccines for Africa and the developing world.

In its short history, Biovac has been able to develop capacity and know-how in conjugate vaccines. The established technology platform includes bacterial fermentation, polysaccharide purification, conjugation and the associated analytical methods. Product-development partnerships are in place with a number of international agencies.

Biovac has invested extensively over the last few years in new vaccine manufacturing and testing facilities. Inward technology transfers are under way with a number of global vaccine-manufacturer partners for local manufacture.

Biovac is the only manufacturer of human vaccines in southern Africa. It is based in Cape Town, South Africa.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|--------------------------------|-----------------------|-------------------------------------|
| | Pneumococcal Conjugate Vaccine | pfs | |
| | Hexavalent vaccine | Vial | 0.5ml |

Future Product Pipe Line

- Hib: Biovac has developed its own *Haemophilus influenzae* type b vaccine technology and has successfully concluded out-licensing deals
- Further contract formulation/filling/finishing – various technology transfer products

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

Biovac welcomes the opportunity to evaluate collaborative partnerships related to the development and manufacture of vaccines and other biological products relevant to Africa and other developing countries.

- Inward technology transfers on products relevant to Africa, particularly bacterial and conjugate vaccines.
- Collaborations on conjugate-vaccine product development
- Contract production of bulk antigen – pilot and full-scale GMP
Sourcing finished products for the local and regional market

Contact Details

| | | | |
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Name of the company : **The Center for Genetic Engineering and Biotechnology**

Head of Institution : **Dr. Luis Herrera Martínez**. Director General

Established : **1986**

Country : **Cuba**

Overview of the company

The Center for Genetic Engineering and Biotechnology (CIGB) since 1986 has become one of the most important research-production facilities at the "Western Havana Bio-Cluster", equipped and staffed to close the cycle from biological research, which means from biotech product and process development, to production, registering, and commercialization. The CIGB has 20 years of experience in the production of recombinant biopharmaceutical molecules such as interferon, Hepatitis B vaccine, Synthetic Haemophilus influenzae type b vaccine, Tetra- and Penta-valent Combined vaccines, streptokinase, epidermal growth factor formulated in different forms, monoclonal antibodies and other products, which are already producing a positive impact on public health in Cuba and a positive cash flow from sales to more than 50 countries.

The CIGB with about 550 scientists and engineers work in more than 50 research and development projects, which involve new vaccines, therapeutic recombinant proteins and peptides, therapeutic monoclonal antibody and diagnostic systems. CIGB project/product portfolio is covered by more than 70 patent applications and manufacture of those arriving into production stage take place under the most stringent GMP conditions leading into international recognition by different authorities.



CIGB is open to implement a coordinated and targeted alliance-building policy, in order to speed up projects, to complement our capacities with those of our new partners, and to open new channels to the most sophisticated markets.

A component of that policy is to anticipate negotiation time and to start alliance building earlier in the product's life cycle. Thus, immersed in this movement, you will find in this document general data about the institution and summaries of eleven projects, which we considered most attractive for negotiation with your organization. However, while the mail proposed focus is set within these propositions, discussions can be opened around other projects of mutual interest as well.

Current Product Pipeline

| Product Name | | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|----------------|---|-------------|------------------------------|---|
| Heberbiovac HB | HB Vaccine | | Vial (liquid) | Pediatric and adult doses, single and multidose |
| Quimi- Hib | Hib Vaccine | | Vial (liquid) | Pediatric, single dose |
| Trivac HB | Tetavalent Vaccine (DPT-HB) | | Vial (liquid) | Pediatric and adult doses, single and multidose |
| Heberpenta L | Pentavalent Vaccine (DPT-HB-Hib). Fully liquid in one vial | | Vial (liquid) | Pentavalent Vaccine (DPT-HB+Hib) |
| Heberon | Interferon's | | Vial (liquid & freeze dried) | Several presentations |
| Hebekinasa | Streptokinase | | Vial (freeze dried) | Several presentations |
| Heberprot-P | Heberprot-P® is a novel and unique medicine indicated for diabetic foot ulcer treatment (DFU). This innovative product contains epithermal growth factor (EGF) as active pharmaceutical ingredient (APhI) to be applied by intra-lesional infiltration directly in the wound site | | Vial (freeze dried) | 25 and 75 mcg/vial |

Future Product Pipe Line

| Product Name | Pre Clinical | Phase 1 | Clinical Phase 2 | Phase 3 | Expected launch date Quarter / Year |
|---|--------------|---------|---------------------|---------|--|
| | | | | | |
| Heberprot - P | | | | | |
| HBV vaccine (NASVAC) | | | | | |
| HCV vaccine (CIGB - 230) | | | | | |
| CIGB - 500 (Cytoprotective Agent) | | | | | |
| CEA recombinant antibody fragment (CIGB - M3) | | | | | |
| HPV vaccine | | | | | |
| Prostate cancer vaccine | | | | | |
| CIGB - 370 (Anti- tumor agent) | | | | | |
| CIGB - 166 (anti- VEGF antibody) | | | | | |
| CIGB _ 247 (VEGF vaccine) | | | | | |
| CIGB - 552 (anti -tumor peptide) | | | | | |
| Dengue vaccine | | | | | |
| Dengue anti-viral molecules | | | | | |
| CIGB - 845 (neure-protective agent) | | | | | |
| Peptide for Rheumatoid Arthritis | | | | | |

Areas of Interest for Collaboration

- Business Strategy for International Partnership in R&D CIGB's Projects
- CIGB is open to implement a coordinated and targeted alliance-building policy, in order to speed up projects, to complement our capacities with those of our new partners, and to open new channels to the most sophisticated markets

Contact Details

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Name of the company : **The Company for Vaccine and Biological Production No.1 (VABIOTECH)**

Head of Institution : **1 Yersin Street, Hanoi, Vietnam**

Established : **2000**

Location : **Vietnam**

Overview of the company

The Company for Vaccine and Biological Production No.1 is a State-Owned Company which used to belong to The National Institute of Hygiene and Epidemiology (NIHE), Hanoi-Vietnam. From June 2010, VABIOTECH has been transformed into a State Owned One Member Limited Company

VABIOTECH is one of the leading companies in Vietnam in manufacturing, trading, researching and developing a wide range of vaccines and biologicals for human use, analyzing samples of new developed vaccines and biological products, diagnostic kits, therapeutic products, pharmaceuticals; cosmetics, nutrition foods, providing healthcare services... Being the biggest vaccine



manufacturer and supplier for the National Expanded Program on Immunization in Vietnam with GMP-qualified facilities, VABIOTECH is proud of its contribution to prevent, eliminate and gradually eradicate dangerous infectious diseases in order to improve children's health in Vietnam. Currently, VABIOTECH produces 4 vaccines: Hepatitis B, Hepatitis A, Japanese Encephalitis, Oral cholera and a series of diagnosis kits for detection of HBsAg, anti-HBs, anti-HCV and anti-HIV. Besides, VABIOTECH also imports and provides some other vaccines and biological products to meet the market's demand such as: Mumps, Rubella, Meningococcal and Varicella. VABIOTECH is highly committed to provide its best products at favorable price in order to protect Vietnamese people's health and well-being.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|-------------------------------|--|----------------------|--|
| Hepatitis A Vaccine | Vaccine is a suspension containing inactivated hepatitis A virus (HM 175 hepatitis A strain) absorbed onto aluminum hydroxide. | vial | 1.0 |
| Hepatitis B vaccine | It is a non-infectious, inactivated recombinant subunit viral vaccine derived from HBsAg produced in yeast cells using recombinant DNA technology. It is a whitish turbid liquid which is produced by culture of genetically engineered yeast cells which carry the relevant gene of HBsAg, purified and inactivated by several physico-chemical steps such as ultra centrifugation, column chromatography and formaldehyde treatment. | vial | 0.5/1.0 |
| Japanese Encephalitis vaccine | The vaccine is produced by VABIOTECH upon technology transfer from BIKEN Institute – Japan, use Japanese encephalitis virus Nakayama strain. This is an inactivated, purified vaccine derived from mouse brain. | vial | 1.0/5.0 |
| Cholera vaccine | The vaccine is used against Cholera. The vaccine is produced from Cholera bacteria, consisting of V Cholerae Classical biotype, ELTor and O 139. | vial | 7.5 |

Future Product Pipe Line

- H₃N₂ influenza vaccine (Primary Monkey kidney cell base)
- Hib conjugate vaccine
- Rabies vaccine (vero cell base)
- Japanese Encephalitis vaccine (vero cell base)
- Enterovirus 71 vaccine (EV71)
- S. typhoid Vi conjugate vaccine
- Hepatitis A vaccine (vero cell base)

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| H ₃ N ₂ influenza vaccine | | | | | I/2014 |
| Hib conjugate vaccine | | | | | I/2016 |
| Rabies vaccine | | | | | I/2016 |
| Japanese Encephalitis vaccine | | | | | I/2017 |
| Ev71 vaccine | | | | | I/2016 |
| S. typhoid Vi conjugate vaccine | | | | | I/2016 |
| Hepatitis A vaccine | | | | | I/2016 |

Areas of Interest for Collaboration

- Technology transfer
- Filling and secondary packaging
- Register; collaborate in doing clinical trial, import and market vaccines and biological products in Vietnam's market.
- Export VABIOTECH's products
- Research, develop and commercialize new generation vaccines in Vietnam.

Contact Details

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Name of the company : **The Government Pharmaceutical Organization**

Head of Institution : **Dr. Suwach Siasiriwattana MD. Managing Director.**

Established : **5th August 1966**

Location : **Thailand**

Overview of the company

The Government Pharmaceutical Organization (GPO) of Thailand is a state enterprise under Ministry of Public Health. It was founded in the year 1966 by merging of a pharmaceutical manufacturing plant (founded in 1939) and Pharmaceutical Department (founded in 1901) according to the GPO Act of 1966. The annual revenue of fiscal year 2012 (Oct 2011-Sep 2012) is approx. 400 mUSD. The total pharmaceutical product items are more than 300. The total staff is about 2,700.

The main responsibility of GPO is to produce medicines and pharmaceutical products to serve the national health security system and other medicine supplies. Biological Product Department of GPO is, one of the Production Clusters, responsible for production of vaccines and antisera. At present, staff under this department is about 180. Our current products are JE (MB) vaccine, antiserum of



tetanus and snake venoms. The coming vaccines of dT, TT, DTP DTP-HB and influenza vaccines are under development. The development of influenza vaccine has been supported by WHO and Thai Government including domestic and international networks. The H1N1 2009 PLAIV was registered for pandemic purpose in July 2011. The new strain H5N2 PLAIV is now completed clinical study Phase II and ongoing to submit for registration for pandemic use. The seasonal IIV is being scaled up from pilot scale to industrial scale with technical assistance from KAKETSUKEN, Japan.

The industrial influenza vaccine plant in Saraburi province (120 Km away from Bangkok) is under construction with the support from the government and this will be the new factory for biological products in the future.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5 / 1.0 / 5.0 / 10.0 ml |
|-------------------------------|---|----------------------|---|
| Japanese Encephalitis vaccine | Inactivated Japanese Encephalitis vaccine, Beijing strain | Vial | 0.5 ml and 5.0 ml |
| TAT | Tetanus Antitoxin | Ampoule / Vial | 1ml / 2ml |
| Antisnake venom | Anti Cobra, Anti Malayan Pit Viper, Anti Russell's Viper | Ampoule | 10ml |

Future Product Pipe Line

- Inactivated Influenza vaccine
- Live attenuated Influenza vaccine
- DTP-Hepatitis B vaccine
- dT vaccine
- Tetanus vaccine
- Cell based JE

| Product Name | Pre Clinical | | Clinical | | Expected launch date Quarter / Year |
|--------------|--------------|---------|----------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

- Development of other vaccines and biopharmaceutical products
- Technology transfer
- Research Collaboration

Contact Details

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Website: **www.gpo.or.th**



Name of the company : **The Holding company for Biological products and Vaccines (VACSERA)**

Head of Institution : **Dr. Olfat Mustafa Ghourab**

Established : **1881, The oldest manufacturer of vaccines in Africa & the Middle East. It turned into a governmental organization by 1970s then into a holding company in 2002.**

Location : **Egypt**

Overview of the company

The Holding Company for Biological Products & Vaccines (VACSERA) is the only producer of vaccines & sera in Egypt and has one of the main blood banks.

VACSERA's long journey of disease prevention & vaccine production started in 1881 as a small laboratory established by the government to produce vaccines, and the first success story was the production of smallpox vaccine for the first time in Egypt by 1893.

In July 2002, VACSERA became a state owned holding company with three affiliated companies:

1. EGYVAC : The Egyptian Company for Production of Vaccines, Sera and Drugs.

2. EGYBLOOD : The Egyptian Company for Blood Transfusion Services.

3. EGYVET : The Egyptian Company for Drugs & Veterinary Vaccines.

Ever since, VACSERA is dedicated to fulfill Egypt's strategic public health needs from vaccines, sera & biological products.

We are also committed to export vaccines to the public sector of developing countries especially Africa and Gulf area at preferential price.

As a leading company in the field of biological products & vaccines, we are devoted to excel all over our scope of work and to carry out continuous improvement program aiming to comply with the international standards. We strive to achieve this goal with an honest commitment towards our customers, employees, society, country & the whole environment as well.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---|---|----------------------|--|
| I. Vaccines | | | |
| Toxovac | Adsorbed Tetanus Toxoid vaccine | Vial / amp | 0.5 ml & 5 ml |
| DT vaccine (for pediatric use) | Diphtheria & Tetanus Toxoids | Vial / amp | 0.5 ml & 5 ml |
| DT vaccine (for Adult use) | Diphtheria & Tetanus Toxoids | Vial / amp | 0.5 ml & 5 ml |
| DTP vaccine | Diphtheria & Tetanus Toxoids & inactivated Bordetella pertussis | Vial / amp | 0.5 ml & 5 ml |
| Cholera vaccine | Formaldehyde Killed Vibrio cholera | Vial / amp | 0.5 ml & 10 ml |
| Typhoid vaccine | Formaldehyde Killed Salmonella typhi | Vial / amp | 0.5 ml & 10 ml |
| Mixvac (Typhoid / tetanus vaccine) | killed Salmonella typhi | Vial / amp | 10 ml |
| Meningococcal AC Vaccine | Purified polysaccharide From Neisseria meningitidis of types A & C | vial | 10 ml & 25 ml |
| Speeda Rabies vaccine for human use | Freeze dried rabies vaccine vero cell | vial | 0.5 ml |
| II. Sera | | | |
| Polyvalent anti - scorpion serum | Anti - scorpion serum (liquid/ lyophilized) | amp | 1 ml |
| Snake venom antiserum polyvalent (liquid / lyophilized) | Polyvalent anti - snake serum | Vial | 10 ml |
| Polyvalent anti - viper venom serum (lyophilized) | Polyvalent anti - viper serum | Vial | 5 ml |
| Tetanus antitoxin 30000 IU (therapeutic) | Tetanus antitoxin 30000 IU | Vial | 10 ml |
| Tetanus antitoxin 1500 IU (prophylactic) | Tetanus antitoxin 1500 IU | Amp | 1 ml |
| Tetan 3000 IU (prophylactic) | Tetanus antitoxin 3000 IU | Amp | 1 ml |
| Diphtheria antitoxin | Diphtheria antitoxin 10000 IU | Vial | 10 ml |
| Polyvalent anti - viper venom serum (liquid) | Polyvalent anti - viper serum | Vial | 5 ml |
| III. Biopharmaceuticals | | | |
| Insulin- Mix VACSERA | Human insulin- Mix (100 I.U.) | vial | 10 ml |
| BCG-T | Effective treatment for some non-invasive bladder cancers. It's given directly into the bladder (intravesical). | vial | 3 ml |
| Abevac® | Bee venom | vial | 1 ml |

Future Product Pipe Line

Vaccines:

- Penta vaccine (DTPw- HB- HiB)
- Seasonal Influenza vaccine
- Rabies vaccine
- Bi-valent OPV
- Haemophilus Influenza vaccine

Veterinary Vaccines:

- Veterinary Influenza vaccine (Avian flu)

Blood derivatives:

- Human Albumin
- Factors VII, VIII & IX
- Gama-globulins.

Others:

- Retractable safety syringes.

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|--------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| | | | | | |
| | | | | | |
| | | | | | |

Areas of Interest for Collaboration

- Technology transfer of vaccines.

Contact Details

| | | |
|------------------------|---|---------------------------|
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Name of the company : **VINS Bioproducts Limited**

Head of Institution : **S.N. Daga**

Established : **1997**

Country : **INDIA**

Overview of the company

VINS Bioproducts Limited is committed to manufacture and market WHO standard anti-sera immunoglobulins to the customers in India and also worldwide. VINS produces anti-sera immunoglobulins like:

- Snake venom anti-serum
- Rabies anti-serum



- Scorpion venom anti-serum
- Anti-sera for tetanus
- Diphtheria and
- Gas gangrene

Anti-sera manufactured by VINS are accredited by the World Health Organization and other international agencies and we are engaged in continuous improvement of products and processes to enhance the quality of production and cost competitiveness in order to build value for our customers. VINS Bioproducts Limited serves its customers globally with sales in over 60 countries. We have also expanded the business by building capabilities internally, through strategic expansions and acquisitions.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--|---|---------------------------------|-------------------------------------|
| Rabies Immunoglobulin | VINRAB 1000 IU Enzyme Refined, Equine Anti Rabies Immunoglobulin fragments | Vial Liquid | 5ml |
| Rabies Immunoglobulin | VINRIG 1500 IU Enzyme Refined, Equine Anti Rabies Immunoglobulin fragments | Vial Liquid | 5ml |
| Snake Venom Antiserum for SAARC Countries | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venoms of snakes of <i>Naja sp</i> , <i>Bungarus sp</i> , <i>Daboia sp</i> , <i>Echis sp</i> | Vial Liquid and Lyophilized | 10ml |
| Snake Venom Antiserum for Africa | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venoms of snakes of <i>Naja sp</i> , <i>Dendroaspis sp</i> , <i>Bitis sp</i> , <i>Echis sp</i> | Vial Lyophilized | 10ml |
| Snake Venom Antiserum for Middle East and North Africa | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venoms of snakes of <i>Naja sp</i> and <i>Cerastes sp</i> . Para specifically, neutralizes <i>Walterinnesia sp</i> , <i>Bitis sp</i> , <i>Echis sp</i> , <i>Macrovipera sp</i> , <i>Vipera sp</i> , <i>Cerastes sp</i> . | Vial Lyophilized | 10ml |
| Snake Venom Antiserum for Central Africa | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venoms of snakes of <i>Dendroaspis sp</i> , <i>Bitis sp</i> , <i>Echis sp</i> , and <i>Daboia sp</i> . | Vial Lyophilized | 10ml |
| Scorpion Venom Antiserum for Middle East and North Africa | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venoms of scorpions of <i>Leiurus sp</i> and <i>Androctonus sp</i> . Para specifically, <i>Androctonus sp</i> , <i>Scorpiomarus sp</i> and <i>Buthus sp</i> . | Vial Lyophilized | 1ml |
| Tetanus Antitoxin (ATS) | Tetanus Antitoxin 1000 IU / 1500 IU / 3000 IU IP/BP/IHS (1 ml vial) | Vial/ Ampoule/ PFS Liquid | 1ml |
| Diphtheria Antitoxin (ADS) | Diphtheria Antitoxin 10000 IU IP/BP (10 mL vial) | Vial Liquid | 10 mL |
| Mixed Gas gangrene Anti-toxin | Polyvalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the toxins of <i>Clostridium sp</i> . | Vial Liquid | 10 mL |
| Snake Venom Antiserum Echis Ocellatus monovalent for Nigeria | Monovalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venom of <i>Echis ocellatus</i> (Oscillated Carpet Viper) | Vial Lyophilized | 10 mL |
| Snake Venom Antiserum Naja kouthia monovalent for Thailand and Myanmar | Monovalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venom of <i>Naja kouthia</i> (Monocled cobra) | Vial Lyophilized | 10 mL |
| Snake Venom Antiserum Daboia russellii monovalent for Thailand and Myanmar | Monovalent, Enzyme Refined, Equine Antivenom Immunoglobulin fragments neutralizing the venom of <i>Daboia russellii</i> (Russell's Viper) | Vial Lyophilized | 10 mL |

Future Product Pipe Line

- Chimeric Anti gas gangrene serum
- Anti Thymocyte globulins

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|----------------------------------|--------------|----------|---------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| Chimeric Anti gas gangrene serum | Under R & D | | | | |
| Anti Thymocyte globulins | | | | | |

Areas of Interest for Collaboration

- Technology transfers
- University collaboration

Contact Details

| | | | |
|------------------------|---|---------|--------------------------------------|
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Name of the company : **Walvax Biotechnology Co., Ltd**
Head of Institution : **Li Yunchun**
Established : **2001**
Location : **P.R. China**

Overview of the company

Walvax Biotechnology Co., Ltd. (referred to as Walvax) was founded in 2001, which is a modern biological pharmaceutical enterprise engaged in R & D, production and sales of bio-medicine products. Walvax is committed to provide safe bio-medicine (such as vaccines, blood products and so on) with excellent quality and advanced technology for domestic and foreign markets. Walvax's headquarters is located in Kunming, Yunnan Province of China. Currently, Walvax has a modern R & D center in National High-tech Zone of Kunming, and a modern vaccine production base and pilot base in High-tech Zone of Yunnan Yuxi and Jiangsu Taizhou China Medical City, respectively. Walvax's marketing network covers 30 provinces and cities of China, which includes more than 2000 counties.



In November, 2010, Walvax Biotechnology Co., Ltd. (stock name: Walvax Biotech, and stock code: 300142) listed on Shenzhen Stock Exchange. The operation income of 2014 reached 719.02 million RMB, while the net profit was 143.42 million RMB.

Walvax has successfully developed 20 vaccines, in which Haemophilus Influenzae Type b Conjugate Vaccine, Group A, C Meningococcal Polysaccharide Conjugate Vaccine Freeze Dried, Group A, C, W135 and Y Meningococcal Polysaccharide Vaccine and Group A, C Meningococcal Polysaccharide Vaccine Freeze Dried have been already marketed.

Current Product Pipeline

| Product Name | Description | Type Vial/Ampoule | Presentation 0.5/ 1.0 / 5.0 / 10.0 ml |
|---|--|----------------------|--|
| Haemophilus Influenzae Type b Conjugate Vaccine | The product officially launched into market in September 2007. This vaccine is indicated for infants from the age of 2 months to 5 years to induce the active immunization against infectious diseases caused by <i>Haemophilus influenzae</i> type b, such as meningitis, pneumonia, septicemia, cellulitis, arthritis, epiglottitis etc. | Vial | 0.5 ml |
| Haemophilus Influenzae Type b Conjugate Vaccine | In April 2010, Walvax launched a prefilled syringe dosage form of Haemophilus Influenzae Type b Conjugate Vaccine (Hib). Compared to similar products of semi-prefilled syringe dosage form, our prefilled syringe Hib vaccine need just two-step inject operation: Remove the needle shield, and inject. Since no re-dissolution and no need to pierce the vial cap, it can effectively reduce the abundant procedures and waste items in the course of injection. It also can effectively avoid contamination and keep the tip intact. So it can reduce the pain of the vaccinated children. | Pre-filled syringe | 0.5 ml |
| Group A, C Meningococcal Polysaccharide Conjugate Vaccine, Freeze Dried | The product was on market officially in September 2009. The vaccine is indicated for infants from the age of 3 months to 5 years preventing diseases caused by Meningococcal Group A or C, such as cerebrospinal meningitis and septicemia. | Vial | 0.5 ml |
| Group A, C Meningococcal Polysaccharide Vaccine Freeze Dried | The product was on market officially in December 2012. This product is only recommended for Children and adults over the age of 2 years. This vaccine is used to prevent disease caused by the bacteria named "Neisseria meningitidis groups A and group C". | Vial | 0.5 ml |
| Group A, C, W135 and Y Meningococcal Polysaccharide Vaccine | The product was on market officially in December 2012. Currently, this product is only recommended for children above 2 years old and the people who are at the high risk of getting this disease to use. After vaccination, it can prevent meningococcal disease caused by epidemic Neisseria meningitidis serogroups A, C, Y, and W-135. | Vial | 1ml /vial/ lyophilized vaccine + 0.5ml / vial /diluent |

Future Product Pipe Line

- 23 valent pneumococcal polysaccharide vaccine
- Diphtheria, Tetanus and acellular Pertussis Combined vaccine, Adsorbed
- Tetanus toxoidvaccine, adsorbed
- Human recombinant papillomatosis poison bivalent vaccine type (16/18) (yeast)
- Restructuring the HER2 humanized monoclonal antibodies
- Inactivated split Influenza vaccine
- Recombined (Hansenula polymorpha) Hepatitis B vaccine
- DTaP+Hib combined vaccine
- Restructuring of TNF alpha human mouse chimeric monoclonal antibody
- Recombination anti-tumor necrosis factor alpha all anthropogenic monoclonal antibodies
- 13 valent pneumococcal conjugate vaccine
- Group A, C, W135 and Y Meningococcal conjugate Vaccine
- Immunoglobulin (pH4)
- Typhoid vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---|--------------|----------|---------|--|--|
| | Phase 1 | Phase 2 | Phase 3 | | |
| 23 valent pneumococcal polysaccharide vaccine | | | | | |
| Diphtheria, Tetanus and acellular Pertussis Combined vaccine, Adsorbed | | | | | |
| Tetanus toxoidvaccine, adsorbed | | | | | |
| Human recombinant papillomatosis poison bivalent vaccine type (16/18) (yeast) | | | | | |

Areas of Interest for Collaboration

- Walvax strives to become your best collaboration partner in China. Area of collaboration includes product distributorship, licenses-in/out and manufacture support. Products for Distribution in Asia (especially Southeast Asia)
- Vaccine:
Inactivated Polio Vaccine (IPV), Measles-Mumps-Rubella vaccine (MMR), Varicella vaccine, Rotavirus Vaccine, Pneumococcal Vaccine
 - Source Biologics from world
 - 1.Vaccine
 - 2.Blood Plasma Products
 - 3.Biologics

Contact Details

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Name of the company : **XIAMEN INNOVAX BIOTECH CO., LTD.**

Head of Institution : **Mr. Steven Gao, General Manager**

Established : **2005**

Country : **P.R. China**

Overview of the company

Xiamen Innovax Biotech CO., LTD. (INNOVAX) is a leading company in the field of developing, manufacturing and marketing innovative vaccines with its headquarter and manufacture base in Xiamen, China.



In collaboration with the National Institute of Diagnostics and Vaccine Development in Infectious Diseases (NIDVD), INNOVAX has established a core-platform using DNA recombinant technology to express protein in *E. coli* for vaccine production. Based on this platform, the world's first Hepatitis E Vaccine--Hecolin® has launched in China in October 2012. In addition, a HPV 16/18 bivalent Vaccine--Cecolin® under phase III clinical trial and a 6/11 bivalent Vaccine under phase II clinical trial, have been developed. Besides, a 9-valent HPV vaccine is now in application of clinical approval.

Current Product Pipeline

| Product Name | Description | Type | Presentation |
|--------------|------------------------------|--------------------|--------------------------|
| | | Vial/Ampoule | 0.5/ 1.0 / 5.0 / 10.0 ml |
| Hecolin® | Hepatitis E Vaccine (E.coli) | Pre-filled Syringe | 0.5 ml |

Future Product Pipe Line

- HPV 16/18 bivalent Vaccine
- HPV 6/11 bivalent Vaccine
- HPV 9-valent Vaccine

| Product Name | Pre Clinical | Clinical | | | Expected launch date Quarter / Year |
|---------------------------------------|--------------|-----------|-----------|-----------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| HPV 16/18 bivalent Vaccine (Cecolin®) | | | | 2012-2018 | 2019 |
| HPV 6/11 bivalent Vaccine | | | | 2017-2019 | 2021 |
| HPV 9-valent Vaccine | | 2017-2018 | 2018-2019 | 2019-2023 | 2025 |

Areas of Interest for Collaboration

- Licensing
- Overseas distribution
- Product co-development

Contact Details

| | | | |
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Name of the company : **Zydus Cadila**

Head of Institution : **Mr. Pankaj R Patel**

Established : **1952**

Country : **India**

Overview of the company

Zydus Cadila is a fully integrated, global healthcare provider, with strengths all along the pharmaceutical value chain.

The group has built strong positions in key segments of Cardiovasculars, Gastrointestinals, Women's Healthcare, Respiratory, Pain Management and Anti-infectives. The group also has a formidable presence in the field of biologics spanning therapeutic areas like oncology, nephrology, rheumatology, hepatology and vaccines.



Globally, the group has a strong presence in the regulated markets of the US, Europe (France & Spain) and the high profile markets of Latin America and South Africa.

The group has a team of around 1200 research professionals spearheading its R&D programme on development of NMEs, NBEs and vaccines at research centers based out of India and Italy.

Zydus is also the only Indian pharma company to launch its own patented NCE – Lipaglyn. In 2014, the group launched Exemptia, the world's first biosimilar of Adalimumab.

Current Product Pipeline

| Product Name | Description | Type Vial/ Ampoule | Presentation 0.5/1.0/5.0/10.0 ml |
|--------------|---|-----------------------|-------------------------------------|
| Vaxiflu S | Inactivated influenza vaccine (whole virion) (pandemic influenza (H1N1) 2009 monovalent vaccine | vial | 0.5/5.0 ml |
| VacTyph | Vi capsular polysaccharide typhoid vaccine | Vial & PFS | 0.5 ml |
| Vaxirab N | Purified chick embryo cell culture rabies vaccine | vial | 1 ml |

Future Product Pipe Line

- MMR vaccine
- Varicella vaccine
- Measles vaccine
- Tetanus toxoid
- DTwP
- Typhoid TT conjugate vaccine
- Anti-rabies mAbs
- Pentavalent (DTwP-Hib-Hep B) vaccine
- MMRV vaccine
- HPV vaccine
- Hepatitis A vaccine
- Hepatitis E vaccine
- Leishmania vaccine
- Malaria vaccine

| Product Name | Pre Clinical | | Clinical | | Expected launch date Quarter / Year |
|--------------------------------------|---------------------|---------|----------|---------|--|
| | | Phase 1 | Phase 2 | Phase 3 | |
| MMR vaccine | | | | | Q1/2017 |
| Varicella vaccine | | | | | Q1/2017 |
| Trivalent influenza vaccine | | | | | Q1/2017 |
| Tetavalent influenza vaccine | | | | | Q4/2017 |
| Measles vaccine | | | | | |
| Tetanus toxoid | | | | | |
| DTwP vaccine | | | | | |
| Typhoid TT conjugate vaccine | | | | Ongoing | Q4/2017 |
| Anti-rabies mAbs | | | | | Q3/2017 |
| Pentavalent (DTwP-Hib-Hep B) vaccine | | | | | Q2/2019 |
| MMRV vaccine | | | | | Q2/2019 |
| HPV vaccine | | Ongoing | | | Q3/2019 |
| Hepatitis A vaccine | Ongoing | | | | 2021 |
| Hepatitis E vaccine | Ongoing | | | | 2021 |
| Leishmania vaccine | Yet to be initiated | | | | 2022 |
| Malaria vaccine | Yet to be initiated | | | | 2022 |

Areas of Interest for Collaboration

Collaboration for finding vaccine candidates (mentioned below) wherein proof of concept studies for safety and efficacy are established until preclinical or preferably until phase I clinical trial

- Tuberculosis
- Malaria
- Therapeutic cancer vaccines
- Therapeutic metabolic disease vaccines
- Rotavirus
- Thermostable vaccine technologies
- New adjuvants

Contact Details

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List of Member Organizations

| | | | |
|-----|---|--------------|----|
| 1. | AMSON Vaccines & Pharmaceuticals Ltd. | Pakistan | 1 |
| 2. | Arab Company for Pharmaceutical Products (Arabio) | Saudi Arabia | 3 |
| 3. | Beijing Minhai Biotechnology Co., Ltd. | P.R. China | 5 |
| 4. | Beijing Tiantan Biological Products Co., Ltd. | P.R. China | 7 |
| 5. | Bharat Biotech International Limited. | India | 9 |
| 6. | Biological E. Limited. | India | 11 |
| 7. | Bio Farma | Indonesia | 13 |
| 8. | Bio-Manguinhos - Institute of Technology on Immunobiologicals | Brazil | 15 |
| 9. | BioNet-Asia Co., Ltd. | Thailand | 17 |
| 10. | BravoVaxCo., Ltd. | P.R. China | 19 |
| 11. | CPL Biologicals Private Limited | India | 21 |
| 12. | Center for Research and production of Vaccine and Biological (POLYVAC), | Vietnam | 23 |

List of Member Organizations

| | | | |
|-----|--|-------------------|----|
| 13. | Changchun BCHO Biotechnology Co. | P.R. China | 25 |
| 14. | China National Biotech Group (CNBG) | P.R. China | 27 |
| 15. | EuBiologics, Co. Ltd. | Republic of Korea | 29 |
| 16. | Finlay Institute | Cuba | 31 |
| 17. | Fundação Ataulpho de Paiva | Brazil | 33 |
| 18. | Green Cross Corporation | Korea | 35 |
| 19. | GreenSignal Bio Pharma Limited | India | 37 |
| 20. | Haffkine Bio-Pharmaceutical Corporation Limited. | India | 39 |
| 21. | HLL Biotech Limited | India | 41 |
| 22. | Incepta Vaccine Ltd. | Bangladesh | 43 |
| 23. | Indian Immunologicals Limited. | India | 45 |
| 24. | Instituto Biologico Argentino S.A.I.C | Argentina | 47 |
| 25. | Institute of Vaccines and Medical Biologicals | Vietnam | 49 |

List of Member Organizations

| | | | |
|-----|--|-------------------|----|
| 26. | Instituto Butantan | Brazil | 51 |
| 27. | Institute of Medical Biology, Chinese Academy of Medical Sciences | P.R. China | 53 |
| 28. | Laboratorios de Biológicos y Reactivos de México, S.A.de C.V.(BIRMEX) | Mexico | 55 |
| 29. | LG Life Sciences Ltd. | Republic of Korea | 57 |
| 30. | Liaoning Cheng Da Biotechnology Co., Ltd. (CDBIO) | P.R. China | 59 |
| 31. | Medigen Vaccinology Corporation | Taiwan | 61 |
| 32. | National Administration of Laboratories and Institutes of Health ANLIS "Dr. Carlos G. Malbrán" | Argentina | 63 |
| 33. | National Institute of Infectious Diseases and Vaccinology | Taiwan | 65 |
| 34. | Panacea Biotec Ltd. | India | 67 |
| 35. | Pasteur Institute of Iran | IR of Iran | 69 |
| 36. | Queen Saovabha Memorial Institute | Thailand | 71 |
| 37. | Razi Vaccine & Serum Research Institute | IR of Iran | 73 |
| 38. | Serum Institute of India Ltd. | India | 75 |

List of Member Organizations

| | | | |
|-----|--|-------------------|----|
| 39. | Sinergium Biotech S.A. | Argentina | 77 |
| 40. | Sinovac Biotech Ltd. | P.R. China | 79 |
| 41. | SK Chemicals (Life Science Biz division) | Republic of Korea | 81 |
| 42. | The Biovac Institute | South Africa | 83 |
| 43. | The Center for Genetic Engineering and Biotechnology | Cuba | 85 |
| 44. | The Company for vaccine and biological production No.1 – VABIOTECH | Vietnam | 87 |
| 45. | The Government Pharmaceutical Organization | Thailand | 89 |
| 46. | The Holding Company for Biological Products & Vaccines (VACSERA) | Egypt | 91 |
| 47. | Vins Bioproducts Ltd. | India | 93 |
| 48. | Walvax Biotechnology Co., Ltd. | P.R. China | 95 |
| 49. | Xiamen Innovax Biotech Co. Ltd. | P.R. China | 97 |
| 50. | Zydus Cadila | India | 99 |



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