

Connecting the World for a Cause



dcvnmn
2018



WELCOME NOTE FROM THE PRESIDENT

Dear DCVMN members, partners and friends,

Welcome to the 19th DCVMN Annual General Meeting at Kunming, China. Over the last nearly 2 decades, DCVMN has made great progress with increase in numbers of members, partners and collaborators, who have contributed to and benefitted from this association. Over the years, we have helped our members improve their technical expertise through trainings, seminars, undertaken various initiatives to help the industry community and other stakeholders, and have helped the industry come together with new ideas to solve common technical, strategic and programmatic challenges facing the industry. This would not have been possible without the collaborative spirit demonstrated by the members and other partners. We are thankful for the efforts from all the stakeholders.

This year we have undertaken a number of new initiatives which we hope would lead to further value creation for our members. One of the initiatives is to further define the role of DCVMN and to come up with a strategic plan for the organization for the next 5 years. This was based on an understanding to shape the Network and its goals in line with the industry challenges of current times. We have just completed the first phase of this exercise, to formulate the strategic goals for DCVMN, and we intend to present the findings to the members during the AGM for further discussion and adoption. I hope, once we have implemented some or all of the recommendations of this exercise, we will see an improved DCVMN playing a much more significant role on the global immunization stage in near future.

Our members have played an important role in improving supply security to the developing world over the last 18 years. Each year, a number of our members reach important milestones thus further enabling our commitment towards providing quality vaccines to developing countries. However, even today, vaccine preventable diseases lead to significant number of deaths in children and in adults. A number of epidemics and pandemics causing diseases still don't have viable supply situation. There are a number of neglected diseases for which vaccines can be made, but aren't being made due to economic considerations. A number of diseases are not being addressed due to technological challenges which need further R&D. It's time all the stakeholders come together to find solutions to these herculean challenges. At the same time, it's important that we address the low hanging fruits as quickly as possible. I hope the AGM provides all of us the right platform to discuss these important issues and to come up with the right frameworks to approach them.

I wish you all a productive and enjoyable time at the DCVMN AGM 2018 and a successful year ahead.

Warm regards,

Mahima Datla
DCVMN President

EXECUTIVE COMMITTEE MEMBERS



Ms. Mahima Datta
President & GAVI Board Alternate
Biological E. Limited, India



Mr. Alexander Roberto Percioso
Vice President
Instituto Fundacao Butantan, Brazil



Mr. Fernando Lobos
Treasurer
Sinergium Biotech, Argentina



Mr. Sai D Prasad
Member & Gavi Board Representative
Bharat Biotech International Limited, India



Ms. LingJiang Yang
Member
China National Biotec Group, China



Mr. Patrick Tippoo
Member
The Biovac Institute, South Africa



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



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
	Russia
	Saudi Arabia
	South Africa
	Taiwan
	Thailand
	Vietnam



AMSON VACCINES & PHARMA (PVT) LTD.

Name of the company : **Amson Vaccine & Pharma (Pvt.) Ltd.**

Head of Institution : **Mr. Shamim Ahmed Khan**

Established : **1995**

Location : **Pakistan**

Overview of the company

Amson Vaccines & Pharma (Pvt.) Ltd. is one of the leading pharmaceutical companies of Pakistan with the distinction of being the only one in the private sector that is licensed to manufacture vaccines. In addition to vaccines, we also manufacture various pharmaceuticals that are available throughout Pakistan through our distribution network. We are regular supplier of



our products to Government Programs and Institutes including Federal EPI. We provide jobs to above 950 personnel who are involved from production to selling / marketing of our products.

Vaccine being our especiality our interest in vaccine delivery system is quite natural. We have set up a plant for the manufacturing of Auto Disable Syringes in Pakistan and four of our designs have been approved by World Health Organization for sale to UNICEF and other UN Agencies.

UNICEF has entered into a long term arrangements with us for the supply of our Auto Disable Syringe for the year 2018–2019

Our aim is to make Pakistan self sufficient in vaccine production and are in discussion with Government of Pakistan for this purpose.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Imatet Injection	Tetanus Toxoid Vaccine	Vial / Ampoule	0.5ml / 5ml / 10ml
Amvax-B Injection	Recombinant Hepatitis B Vaccine	Vial / Ampoule	0.5ml/1ml/5ml/10ml
Typbar Injection	Polysaccharide Typhoid Vaccine	Ampoule	0.5 ml
Polyvalent Anti Snake Venom Serum	Anti Snae Venom Serum (Liquid) (Indo – Pak Sub Continent)	Vial	10 ml

Future Product Pipe Line

- Pentavalent Vaccine
- Anti Tetanus Serum
- Seasonal Influenza Vaccine
- Oral Cholera Vaccine

The material will be imported in bulk ready to fill or concentrate form and filled at our facility.

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

Areas of Interest for Collaboration

- J. V. for vaccine manufacturing
- Typhoid conjugal vaccine (filling)
- BCG vaccine (import and manufacturing)
- MMR vaccine (import and manufacturing)
- Export of Auto Disable Syringes

Contact Details

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Postal code	: 44000		



Name of the company : **Arab Company for Pharmaceutical Products (Arabio).**

Head of Institution : **Dr. Abdulrahman Almutairi (Arabio CEO)**

Established : **Arabio is a limited liability company established in 2005.**

Country : **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 region.

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:

- GSK Vaccines
- InterVax Vaccine
- BioFarma,

Indonesia • AbbVie. • J&J.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Hepatitis B Pediatric		Vial	
Hepatitis B Adult		Vial	
Measles		Vial	
Meningococcal conjugate ACWY vaccine		Vial	
Penta Vaccine (DTwP, Hm, Hep B)		Vial	
Seasonal Influenza Vaccine		PFS	
BCG		Amp	
Tuberculin		Vial	
Oral Polio Vaccine (trivalent) 10 ds		Vial	
Tetanus Toxoid (TT) Vaccine 10 ds		Vial	
Diphtheria Tetanus (DT) Pediatric Vaccine.		Vial	

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

Vaccines:

- Hepatitis A vaccine.
- Rota virus vaccine.
- MMR I MMRV vaccines.
- Pneumococcal vaccine.
- Varicella vaccine.
- Dengue Fever vaccine

Biological Products:

- Immunology:
 - Rheumatoid arthritis (RA)
 - Inflammatory bowel disease (IBD)
 - Psoriasis and dermatologic diseases
 - Psoriatic arthritis (PsA)
 - Osteoarthritis (OA)
 - Systemic lupus erythematosus
- Oncology:
 - Solid tumors
 - Hematologic malignancies
 - Next-generation immuno-oncology

Neuroscience:

- Alzheimer's disease
- Multiple sclerosis
- Parkinson's disease
- Hepatology
- Insulin
- Blood coagulation
- Growth hormones
- Erythropoietin

Contact Details

Name of contact person : **Abdulrahman Almutairi**
(CEO and General Manager)

Tarek Ibrahim (Business Development & Strategic Alliance and Marketing Manager).

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Factory: Al Umrah District, Makkah Industrial Zone, P.O. Box 20355, Makkah 21955, KSA.

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State : Central Province (Riyadh Region)

Location : Saudi Arabia

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email : tarekibrahim@arabio.com

Website : www.arabio.com



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

Head of Institution : **Mr. Zheng Haifa, General Manager**

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 500 million RMB and a total asset of 900 million RMB, at No.35 Simiao Road, Bioengineering &Pharmaceutical Industrial Park, 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 2018, 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 tetravalent 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 15 countries including Uzbekistan, Pakistan, 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	0.5ml
DTaP-Hib	Diphtheria, Tetanus, acellular Pertussis, and Hemophilus Influenae type b combined vaccine	Vial	0.5ml+0.5ml
MR	Measles and Rubella combined vaccine	Vial	Lyophilized
HepB	Hepatitis B vaccine	Vial	10µg,20ug,60ug

Future Product Pipe Line

Product Name	Pre Clinical			Clinical			Expected launch date Quarter / Year
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3	
23-valent Pneumococcal Polysaccharide Vaccine						NDA	2018
ACYW135Meningococcal Polysaccharide Vaccine						NDA	2019
DTaP						NDA	2019
Hib (Lyo)						NDA	2019
HDCV Rabies(cell factory)						NDA	2019
13-valent Pneumococcal Conjugate Vaccine							
Inactivated HepA							
ACYW135 Meningococcal conjugate Vaccine							
Sabin IPV							
Varicella							
Seasonal Influenza							
HDCV rabies (Bioreactor)							
Cholera(Oral)							
DTaP-Hib (Iyo hib)							
DTcP		File IND					
DTcP-Hib-sIPV							
20-valent PCV							
Mumps							
5-valent Rotavirus							
MMR							
HPV							
Group B Meningitis							
4 valent HFMD							
60µg Hep B(nasal spray)							

Areas of Interest for Collaboration

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

Contact Details

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 email : **zhangqian@vip.126.com**
 Website : **http://www.biominhai.com**



Name of the company : **Bharat Biotech International Limited**

Head of Institution : **Dr. Krishna M. Ella**

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® (1&3); ROTAVAC® and Typbar TCV® for supply to UN Agencies. Bharat biotech has invested significantly into R&D which has resulted in development of breakthrough vaccines such as Eco-friendly r-Hepatitis B vaccine (cesium chloride and Thimerosal free), Rotavirus vaccine from a naturally reassorted and attenuated strain and world's first clinically proven Typhoid Conjugate vaccine.



ROTAVAC® has been included into the UIP program of Government of India in 2016 and is being supplied to several States of India in a phased manner. These innovative vaccines reaffirm our focus on product development for developing world countries.

Bharat Biotech has a long history of developing novel health care solutions with focus on developing world populations. Vaccine candidates against Zika and Chikungunya infections are now ready for Phase II human clinical trials.

Bharat Biotech has filed more than 250 patents worldwide and was granted over 100 patents with a strong tradition of developing and respecting IPR.

With globally accredited facilities, Bharat Biotech supplies its products to more than 100 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)	Vial	0.5/1.0/5.0/10mL
Revac-B mcf®	Recombinant Hepatitis B (rDNA) vaccine (Thiomersal free)	Vial/PFS	0.5/1.0mL
INDIRAB®	Purified Inactivated Rabies Vaccine (Vero cell)	Vial	0.5/1.0mL
TYPBAR®	Typhoid Vi Capsular Polysaccharide Vaccine	Vial/PFS	0.5/2.5 mL
JENVAC®	Japanese Encephalitis Vaccine, Inactivated (Adsorbed)	Vial/PFS	0.5/2.5 mL
HNVAC®	H1N1 Pandemic Flu Vaccine	Vial	0.5/.2.5mL
BIO-HIB®	Haemophilus influenzae Type b (PRP-TT Conjugate)	Vial	Lyophilized Powder with Diluent 0.5 mL
Typbar-TCV®	Typhoid Vi Capsular Polysaccharide-TT conjugate Vaccine	Vial /PFS	0.5/2.5mL
ROTAVAC®	Rotavirus® 116E Vaccine (Live attenuated, Oral)	Vial	0.5/2.5/5.0 mL
BIOPOLIO® B1/3	Bivalent Polio Vaccine (Live)	Vial	1.0/2.0 mL
ComVac 3®	Diphtheria, Tetanus and Pertussis (whole cell) Vaccine (Adsorbed)	Vial/PFS	0.5mL
Com Vac 4-HB®	Diphtheria, Pertussis (w), Tetanus, Hepatitis-B (DTwP+Hep-B) Vaccine	Vial	0.5mL
ComVac 5®	Diphtheria, Pertussis(w), Tetanus, Hepatitis-B Haemophilus influenzae (DTwP+Hep B+Hib) Vaccine, (Pentavalent Vaccine)	Vial/PFS	0.5/2.5/5 mL
REGEN D 60	r-Human Epidermal Growth Factor Gel (60 µg)	Tube	7.5 g ; 15 g
REGEN D 150	r- Human Epidermal Growth Factor Gel (150 µg)	Tube	7.5 g ; 15 g
SLVRGEN	r- Human Epidermal Growth Factor, Silver Sulfadiazine & Chlorhexidine Gluconate Cream	Tube	15/30 g
BLOGIT	Saccharomyces Boulardii (Granular) 250mg (active ingredient), oral	Sachet	800g

Future Product Pipe Line

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Zika					
Chikungunya Vaccine					
TetanusToxoid (Meat free)					
Malaria PVR II					
THR 100					
LysostaphinTopical					
Sabin IPV					

Areas of Interest for Collaboration

- Development of novel Vaccines
- 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, Pan American Health Organisation and various Ministries of Health globally. 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	Presentation
Vial/ Ampoule			
ComBE Five	Pentavalent vaccine - Liquid Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus type B conjugate vaccine (DTwP-HepB-Hib)	Vial/PFS (Liquid)	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/PFS	3 mcg / 0.5 ml 6 mcg / 0.5 ml
OTHER VACCINES :			
BI VAC	Hepatitis B Hepatitis B vaccine (recombinant)	Vial	1, 2, 5 & 10 dose Pediatric and 1 & 10 dose Adult
MRBEV	Measles and Rubella Vaccine (Live) (Attenuated, Freeze Dried)	Vial	0.5 ml, 2.5 ml & 5 ml
BI VAC	DT Adsorbed Diphtheria & Tetanus vaccine (for Pediatric)	Vial	1, 10 & 20 dose
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

Future Product Pipe Line

- Hexavalent - DTwP-IPV-Hib-HepB
- TCV - Typhoid conjugate vaccine
- IPV - Inactivated Polio Vaccine
- PCV - Pneumococcal Conjugate Vaccine
- HepA - Hepatitis A 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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State	: Telangana	Mobile	: +91 9849557083
Postal code	: 500 033	Web site:	: www.biologicale.com
Country	: India		



Name of the company : **PT Bio Farma (Persero)**

Head of Institution : **M. Rahman Roestan**

Established : **1890**

Indonesia : **Indonesia**

Overview of the company

Bio Farma focuses on research, development, production, marketing and distribution of biological and pharmaceutical products both nationally and globally. Bio Farma plays an active role in advancing the vaccine research and technology, conducting research on new vaccines in the effort of maintaining a sustainable vaccine supply in the country and the availability of vaccines to meet the global needs of high quality and affordable vaccines.

Supported by competence and experience for more than 128 years of learning, Bio Farma, a state-owned enterprise in Indonesia, manufacturing and distributing vaccines and one of a few WHO pre-qualified vaccine manufacturers, is here as part of the struggle to protect and increase the quality of human life.



Playing an important role to establish a healthy nation in which its existence would be maintained for generations to come. With our philosophy of being "Dedicated to improve Quality of Life," we are ready to devote our efforts to Global Health Security, through Biotech for a better future provides solutions for global prosperity. For more information : www.biofarma.co.id

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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email : **mail@biofarma.co.id**

Website : **www.biofarma.co.id**

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

Head of Institution : **Maurício Zuma**

Established : **May 04, 1976**

Country : **Brazil**

Overview of the company

Bio-Manguinhos was founded in 1976 to strengthen vaccine manufacturing capacity to meet public health demands, as defined by the Ministry of Health (MoH) National Immunization Program (PNI). Since then, the Institute has played a prominent role in government health programs, investing in innovation, technological development and manufacturing of vaccines, in vitro diagnostics and biopharmaceuticals. Our portfolio is made of 31 products, which are supplied primarily to the Unified Health System (SUS).



To master advanced production processes and state-of-the-art technologies, Bio-Manguinhos besides in house R&D, invests also in partnerships and technology transfer agreements with national and international institutions.

Bio-Manguinhos is also a member of the Executive Group of Health Industrial Complex (Gecis), which brings together government authorities, representatives of the national industry, associations and teaching and research institutions, as well as funding agencies. As a member of Gecis, it contributes to the formulation of health public policies.

The changes go further and the Institute is constantly growing and strengthening its technological capabilities. The Industrial Health Biotechnology Complex (CIBS), in Santa Cruz, Rio de Janeiro; and the Vaccines Plant Based Technology Center, in Eusebio, Ceará, are the two newest sites under construction. The building of new facilities will allow the expansion of productive capacity.

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/HBV	Molecular Biology NAT Assay HIV/HCV/HBV	96 reactions/kit	-
ZDC (Zika, Dengue and Chikungunya)	Molecular Biology Assay for Zika, Dengue and Chikungunya	90 reactions	-
Imunoblot DPP® HIV ½	Rapid Test – Imunoblot DPP® HIV ½	20 tests/kit	-
DPP® HIV ½	Rapid Test – DPP® HIV ½	20 tests/kit	Oral-fluid or serum/plasma/whole blood
DPP® Syphilis	Rapid Test – DPP® Syphilis	20 tests/kit	-
DPP® Syphilis DUO	Rapid Test – DPP® Syphilis (Non treponemic and treponemic in the same test)	20 tests/kit	-
DPP® HIV / Syphilis Combo	Rapid Test - DPP® HIV / Syphilis Combo (HIV + Syphilis detection in the same test)	20 tests/kit	-
DPP® Canine Leishmaniasis	Rapid Test – DPP® Canine Leishmaniasis	20 tests/kit	-
DPP® Leptospirosis	Rapid Test – DPP® Leptospirosis	20 tests/kit	-
DPP® Zika	Rapid Test – DPP® Zika	20 tests/kit	-
DPP® Chikungunya	Rapid Test – DPP® Chikungunya	20 tests/kit	-
Chagas Disease IFA	Immunofluorescence – Chagas Disease	600 tests/kit	-
Canine Leishmaniasis ELISA	ELISA – Canine Leishmaniasis	384 tests/kit	-
Human Leishmaniasis IFA	Immunofluorescence – Human Leishmaniasis	600 tests/kit	-
Helm Test	Kato Katz – Helm Test	100 tests/kit	-

PS: DPP® = Dual Path Platform.

Biopharmaceuticals			0.5/1.0/5.0/10.0 ml
Interferon alpha 2b	Interferon alpha 2b recombinant	3, 5 and 10MU/vial	1,0 ml
Erythropoietin	Erythropoietin recombinant	2.000 / 4.000 / 10.000 UI/vial	1,0 ml
Alfatiglicerase	Taliglicerase alfa	200 U/ vial	5,0 ml
Infliximab	Infliximab	100 mg/vial	100 mg
Betainterferon 1-a	Betainterferon 1-a recombinant	22 and 44 mcg/ prefilled syringes	0,5 ml

Future Product Pipe Line

- Conjugate Meningitis C Vaccine
- Conjugated Multivalent Meningitis Vaccine
- Dengue tetravalent vaccine (inactivated)
- Zika vaccine
- Yellow fever vaccine improvement (attenuated)
- Yellow fever vaccine (inactivated)
- Yellow fever vaccine (plant-based vaccine)
- Measles and Rubella vaccine
- Peginterferon Alpha 2b
- Humanized monoclonal antibody Anti-MRSA
- Flex NAT Assay HIV/HBV/HCV
- NAT Assay HIV/HBV/HCV + new targets (ex: malaria)
- Liquid Microarray

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

Country : **Thailand**

Overview of the company

BioNet-Asia is a Biotech company focused on the development and production of the next generation of innovative vaccines. BioNet aims to provide a rapid access to life-saving vaccines to the neediest on all continents.

BioNet is the only manufacturer of recombinant acellular Pertussis vaccines produced by using a patented recombinant DNA technology. These contain a genetically-inactivated Pertussis Toxin (PTgen) which induces higher anti-PT immune response as demonstrated in several clinical trials. Two PTgen-containing vaccines are already available in Thailand: Pertagen®, a monovalent acellular Pertussis (aP) vaccine and Boostagen®, a Tetanus-diphtheria-acellular Pertussis (Tdap) combination vaccine which are used for booster immunization in adolescents and adults including pregnant women.



With a global market reach and network expertise, BioNet has also been supporting vaccine manufacturers in their rapid expansion into international and emerging markets. BioNet is offering access to vaccines and technologies through global partnerships that have led to the supply of billions of doses of vaccines worldwide. For additional information, please visit www.bionet-asia.com

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Pertagen®	Recombinant acellular pertussis (aP) vaccine	PFS	0.5 ml
Boostagen®	Adult Tdap vaccine (Tetanus-Diphtheria-Recombinant Pertussis vaccine)	PFS	0.5 ml
Hib*	Haemophilus influenzae type b vaccine	Bulk	

*manufacturing partnership

Future Product Pipe Line

- Pediatric combinations
- Dengue vaccine
- Zika vaccine

Product Name	Product development R&D phase	Pre Clinical	Clinical			Expected launch date Quarter / Year
			Phase 1	Phase 2	Phase 3	
Pediatric combinations						
Dengue vaccine						
Zika vaccine						

Areas of Interest for Collaboration

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

Contact Details

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Name of the company : **BravoVax Co., Ltd**
Head of Institution : **Dr. Ke WU, Chief Executive Officer**
Established : **2012**
Country : **P.R.China**

Overview of the company

Established in year 2012, BravoVax is a private pharmaceutical company specialized in development, production and commercialization of human vaccines. It is situated at Wuhan, a large modern city in central China. BravoVax is committed to supply safe, effective and affordable vaccines to protect the vast population in the developing world from various infectious illnesses.

The current product pipeline includes vaccines against bacterial and viral diseases. The first vaccine product of the company, a tetravalent attenuated oral rotavirus vaccine, was sublicensed from USA in 2014 and is expecting to enter the clinical trial phase in 2017.



BravoVax currently possess a R&D and pilot production facility with four vaccine technology platforms and two pilot production lines. The company has established the quality system as per WHO cGMP requirement. In addition, a state-of-the-art industrial-scale facility is being planned with a capacity of 100 million doses per year, which will not only meet the domestic needs, but also to enable the company to provide vaccine supply to the large populations in developing countries.

BravoVax has established active partnership with various renowned academic institutions worldwide. The company strategy is to collaborate with the global health community on the development of vaccines to address unmet healthcare needs.

Current Product Pipeline

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

Future Product Pipe Line

- Rotavirus Vaccine
- Pneumococcal Vaccine
- Respiratory Syncytial Virus Vaccine
- Zika Virus Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Rotavirus Vaccine					2020
Pneumococcal Vaccine					2021
Respiratory Syncytial Virus Vaccine					2023
Zika Virus Vaccine					2022

Areas of Interest for Collaboration

- Vaccines targeting diseases responsible for high rates of mortality and morbidity in developing countries
- Therapeutic biologicals that targeting diseases with high social and economic burdens in both established and emerging markets
- Technologies improving the vaccine accessibility and affordability in developing world settings

Contact Details

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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 solutions 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 novel 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

Future Product Pipe Line

- Rabies Vaccine
- Quadrivalent Influenza Vaccine
- Varicella Zoster Virus Vaccine
- Pancreatic Cancer Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Rabies 3 dose Vaccine	██████████	██████████	██████████	██████████	Q2/2019
Pancreatic Cancer Vaccine	██████████	██████████			
Rabies single dose Vaccine	██████████				
Varicella Zoster Virus Vaccine	██████████				

Areas of Interest for Collaboration

- Development and adoption of new products and technologies through Partnerships
- Recombinant proteins and Monoclonal antibodies for therapeutic use
- 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

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

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

Established : **March, 2004**

Country : **P.R. China**

Overview of the company

Changchun BCHT Biotechnology Co., established in 2004 and located in Changchun, is a biopharmaceutical enterprise engaging in research, development, production and marketing of vaccines, biologics and peptide drugs.

BCHT has well-established innovative platform by the most talented researchers and with the state-of-the-art facility. The management team consists of the members with strong international background and extensive experience in China in biopharmaceutical industry. BCHT owns among the most advanced R&D laboratories and pilot plants for vaccines and peptide drugs in China. Currently, there are two vaccines, varicella and rabies, in the market and many products, such as HIV



vaccine and LAIV vaccine, in its developing pipeline at the different stages. The manufacturing plant, production process and quality assessment and control are fully with the compliance of GMP requirements and some products aim at receiving WHO prequalification in the near future.

BCHT has established a wide cooperation with international partners for technology promotion and product marketing. For example, LAIV is the project collaborated with WHO. The company's products have received the certificate or are in the process of registration for the permit of market access in many countries. BCHT is to strategically explore the international market and business opportunity with the partners.

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 Influenza Vaccine
- Zoster Vaccine
- 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					
Live Attenuated Influenza Vaccine					
Zoster Vaccine					
HPV Vaccine					
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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Name of the company : **China National Biotec Group Company Limited (CNBG)**

Head of Institution : **Dr Xiaoming YANG, Chairman**

Established : **1919**

Country : **P.R. China**

Overview of the company

CNBG has been dedicated in the field of healthcare since 1919. It's the largest state-owned biopharmaceutical company in China in terms of product portfolio, production capacity and company scope. It runs 6 business sectors including human vaccines, blood products, animal health, medical aesthetics, diagnostics and antibody. CNBG can produce 50 kinds of human vaccines against 33 infectious diseases. The annual capacity could reach up to 700M doses. It is the major supplier to Chinese EPI program. It is also the largest blood producer in China, with more than 1000 tons of plasma collection capability. It is the only botulinum toxin producer in China and the first Chinese company pre-qualified by WHO. CNBG currently owns 1 innovative vaccine R&D center, 6 human vaccine manufacture sites, 2 animal vaccine manufacture sites, 1 diagnostic company and 1 public listed company (TiantanBio) for plasma derived products.



CNBG has more than 10,000 employees. The total asset has reached 3.6 Bn USD in 2017 while the total revenue has reached 1.3 Bn USD.

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
	bOPV live attenuated (human diploid cell)	vial	1ml, 20doses/vial
Shanliantai	Diphtheria Tetanus and Acellular Pertussis combines (DTaP), Adsorbed	Amouple/Vial	0.5ml
	Measles, Mumps and Rubella combined vaccine, Live /Measles/MR	Vial	0.5ml
RS.JEV	Japanese Encephalitis Vaccine Live	Vial	0.5ml
Menglingkang	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	Prefilled Injector/ Vial	0.25ml, 0.5ml
Huiyikang	23 Valent Pneumococcal Polysaccharide vaccine	Vial	0.5ml
Loutewei	Live Rotavirus Vaccine (oral)	Vial	0.5ml
Keerbe	Haemophilus Influenza type b conjugate vaccine	Vial	0.5ml
Shengdoushi	Freeze-dried Live attenuated Varicella vaccine	Vial	0.5ml
Wushengxinning	Rabies Vaccine for human use (VERO cell)	Vial	0.5ml X 5vial /dose
	Yellow Fever Vaccine, Live	Vial	0.5ml
	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
LANTOX	Botulinum Toxin A for injection	Vial	50IU,100IU
Yiweile	EV71 vaccine	Vial	0.5ml
	sIPV vaccine	Vial	

Future Product Pipe Line

Product Name	Pre Clinical	IND Filed	Clinical			Expected launch date Quarter / Year
			Phase 1	Phase 2	Phase 3	
Beijing Strain Varicella Live Attenuated Vaccine						
Trivalent Reassortant Rotavirus Vaccine						
Typhoid Vi Conjugate Vaccine						
Recombinant Blood coagulant factor VIII						
Tetravalent flu						
Hexavalent Rotavirus Vaccine						
13-valent Pneumococcal Conjugate Vaccine						
HPV-4						
HPV-11						
Herpes Zoster live Vaccine						
Measles, Mumps, Rubella and Varicella Combined Vaccine Live (MMRV)						
Therapeutic HepB						
Novel HIV vaccine						

Areas of Interest for Collaboration

- Combined Vaccine
- Tumor vaccine
- Immuno-oncology
- Cell therapy
- Gene therapy
- Novel adjuvant, vector
- New target/ MOA
- New cell substrate
- Formulation
- Overseas clinical research
- Emergency response platform
- Researcher training and exchange

Contact Details

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Name of the company : **Chongqing Zhifei Biological Products Co., Ltd**

Head of Institution : **Mr.JIANG Rensheng**

Established : **1995**

Country : **P.R. China**

Overview of the company

Chongqing Zhifei Biological Products Co., Ltd was founded in 1995, headquartered in Chongqing. Zhifei is a hi-tech biological enterprise, with the registered capital of 1.6 billion RMB, a total asset of 4.8 billion RMB and more than 2000 employees up to now. Zhifei is focus on technological innovation and market access of human vaccine and bio-products in R&D, manufacturing, sales. It possesses 4 wholly-owned subsidiaries, there are one plant site and one trading company located in Beijing, another plant lies in Hefei, one more plant in Chongqing.

In its state-of-the-art vaccine plant in China, Zhifei is also building a unique expertise in TB, protein conjugation, cell-culture and vaccine formulation. The company has developed a broad pipeline with 20 products in R&D and clinical stages, including vaccines and recombinant proteins conjugate vaccines.



The company has sold more 2 million vials meningitis vaccine which is now commercialized in Asia market. Zhifei has recently filed a patents application for its new Vaccines which are now evaluated in clinical trial. Zhifei is uniquely positioned as a major partner in technology transfer and market access globally.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Vaccea	Mycobacterium Vaccae for Injection	Vial	22.50µg/vial
Men ACYW135	Group ACYW135 Meningococcal polysaccharide vaccine	Vial	0.5ml
Men AC ps	Group AC Meningococcal polysaccharide vaccine	Vial	0.5ml
Men AC conj	Group AC Meningococcal conjugate vaccine	Vial	0.5ml
Men AC+Hib	Meningococcal Group AC and Haemophilus Type b conjugate vaccine	Vial	0.5ml
Hib	Haemophilus Type b conjugate vaccine	Vial	0.5ml

Future Product Pipe Line

- Typhoid Conjugate Vaccine
- Pneumococcal Conjugate Vaccine
- Meningococcal Conjugate Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
MenACYW135 Conj					
Shigella flexneri 2a and Sonnei Conj					
PPSV23					
Hib freeze-dried					
PCV15					
Tri-component DTaP					
EV71 Inactivated					
EV71+Coxsackievirus A16					
Rotavirus Inactivated					
Quadrivalent Flu Split					
Rabies (MRC-5)					
Rabies(Vero cell)					
Mycobacterium. vaccae vaccine (for TB)					
EAST6-CPF10 Allergen (EC test reagent)					
Recombinant TB vaccine (AEC/BC02)					
BCG					
BCG PPD					
HepB (Hansenula polymorpha)					
Norovirus (Pichia pastoris)					
Zika virus vaccine					

Areas of Interest for Collaboration

- Technology transfer and co-development
- R&D and tech innovation
- International cooperation of vaccine
- Long term & stability marketing and distribution
- TB products cooperation
- Finish or semi-finished products

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Name of the company : **EuBiologics Co., Ltd**
Head of Institution : **Dr Yeong-Ok Baik, CEO**
Established : **March 10 2010**
Country : **Republic of Korea**

Overview of the company

EuBiologics Co., Ltd. is a 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 and went public on the KOSDAQ in Jan 2017. 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" and "Euvichol-Plus"), EuBiologics is pursuing a number of other vaccines against diseases such as typhoid fever, pneumonia and meningitis.

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
Euvichol-Plus®	Oral Cholera Vaccine	Plastic Tube	1.5 ml

Future Product Pipe Line

- Typhoid Conjugate Vaccine
- Pneumococcal Conjugate Vaccine
- Meningococcal Conjugate Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Typhoid Conjugate Vaccine					
Pneumococcal Conjugate Vaccine					
Meningococcal Conjugate Vaccine					

Areas of Interest for Collaboration

- Development of bacterial conjugate vaccines
- Development of combo vaccines
- New adjuvant development, Monophosphoryl Liquid A produced from E.Coli (EcML)
- Virus Like Particle (VLP) based vaccine development

Contact Details

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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
- AW₁₃₅X OMV vaccine
- Conjugated Vi polysaccharide vaccines
- Conjugated Meningococcal ACYW₁₃₅X vaccine
- Onco BCG

Product Name	Pre Clinical			Clinical			Expected launch date Quarter / Year
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3	
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 technological 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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Name of the company : **Fundação Ataulpho de Paiva**
 Head of Institution : **Prof. Germano Gerhardt Filho. MD.**
 Established : **1900**
 Country : **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 two plants. One in Rio de Janeiro city and other in Duque de Caxias district. Both in Rio de Janeiro State.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
BCG	BCG Vaccine	ampoule	1mg/10 doses
IMUNO BCG	IMUNO Therapy for superficial bladder cancer	ampoule	40mg/Intrabladder

Future Product Pipe Line

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

Areas of Interest for Collaboration

Contact Details

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

Postal code : **16924**

Name of the company : **GC Pharma (formerly known as Green Cross Corporation)**

Head of Institution : **Il Sup Huh**

Established : **1967**

Country : **Republic of Korea**



Overview of the company

Since its establishment in 1967, GC Pharma has been safeguarding the public health of S. Korea and is now becoming a leader in the global health industry through its focus on developing necessary, but difficult-to-make medicines.

In 1971, GC Pharma (formerly known as Green Cross Corporation) became the first company in S. Korea and the sixth company in the world to establish a plasma fractionation plant. In 2009, it completed the construction of the Ochang Plant,



the largest biotech facility at the time. GC Pharma has been producing and exporting a variety of plasma-derived products, including albumin, immunoglobulin, and antithrombin. The company has acquired unparalleled expertise in plasma fractionation, and continues to research and develop safer and ever more effective next-generation products.

Prevention of disease is another priority at GC Pharma. In 1983, the company became the third in the world to develop a hepatitis-B vaccine, known as Hepavax, followed by in 1988 becoming the first in the world to develop a vaccine against the Hantavirus hemorrhagic fever (Hantavax). In 1993, GC Pharma became the second in the world to develop a varicella vaccine (Suduvax), and in 2015 it became the fourth in the world to develop a

quadrivalent flu vaccine (GC Flu Quadrivalent), thereby establishing itself as a world-class leader in vaccine development.

Current Product Pipeline

Product Name	Description	Type	Presentation
		Vial/Ampoule	0.5/ 1.0 / 5.0 / 10.0 ml
GC Flu Quadrivalent	Split virion inactivated Influenza Vaccine (quadrivalent)	pre-filled syringe	0.5ml
		vial	0.5ml, 0.25ml
GC FLU	Split virion inactivated Influenza Vaccine (trivalent)	pre-filled syringe	0.5ml, 0.25ml
		vial	0.5ml, 5ml
Varicella Vaccine – GCC inj.	Varicella vaccine (live-attenuated)	vial	0.7ml
Td vaccine	Tetanus, diphtheria toxoid vaccine	pre-filled syringe	0.5ml
Hantavax inj.	Inactivated hantaan virus vaccine (Hemorrhagic fever with renal syndrome vaccine)	vial	0.5ml
GCC- Freeze-dried Cell Culture-derived Japanese Encephalitis Vaccine	Inactivated Japanese Encephalitis Vaccine	vial	0.7ml, 0.4ml
Avian Influenza vaccine	Inactivated pre-pandemic avian influenza vaccine (H5N1)	vial	2.5ml

Future Product Pipe Line

- Varicella vaccine
- BCG vaccine
- Anthrax vaccine
- Tdap vaccine
- Influenza high-dose vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Varicella vaccine	██████████	██████████	██████████	██████████	2019
Anthrax vaccine	██████████	██████████	██████████		2021
Tdap vaccine	██████████	██████████	██████████		2021
Influenza high-dose vaccine	██████████	██████████	██████████		2021
BCG vaccine	██████████	██████████	██████████		2020

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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Location : **Republic of Korea** Website : **http://www.globalgreencross.com/index**

Postal code : **16924**



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

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

Established : **2007**

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 one of the only 5 WHO Pre-qualified BCG Vaccine manufacturers in the world. Vaccines manufactured by the GreenSignal Bio Pharma Private 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.



We also manufacture UROVAC, a BCG for Immunotherapy product for Bladder Cancer. UROVAC is being used globally as therapeutic agent against Bladder Cancer.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
BacilloVAX [®]	BCG Vaccine Freeze Dried (Live Attenuated)	Vial	1mg/vial strength (20 doses)
UROVAC [®]	BCG for Immunotherapy Freeze Dried (Live Attenuated)	Vial	40mg/vial strength

Future Product Pipe Line

- Tetanus Vaccine
- MMR Vaccine
- Anti Snake Venom
- Rabies Vaccine

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

Areas of Interest for Collaboration

- R&D
- Anti Venom Production

Contact Details

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Location	: India	Website	:
Postal code	: 600024		



Name of the company : **Haffkine Bio Pharmaceutical Corporation Ltd.**
 Head of Institution : **Sampada Mehta, Managing Director**
 Established : **1975**
 Country : **India**

Overview of the company

The Haffkine Bio-Pharmaceutical Corporation Ltd. was incorporated in the year 1975 with the main object of taking over and expanding the production activities of the erstwhile Haffkine Institute and to manufacture standard biological and non-biological products of public health importance. The Company also established a Subsidiary Company in 1977 viz. Haffkine Ajintha Pharmaceuticals Ltd., at Jalgaon. This Subsidiary Company produces tablets, capsules, powders, ointments etc...

The Company is engaged in the manufacture and supply of wide range of biological and non-biological products comprising of 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 with a rich background enjoys international recognition and fame for its pioneering work and expertise particularly in the field of vaccines and sera.



The Company plays a pioneering role in the development and production of a wide range of Bacterial and Viral Vaccines for diphtheria, tetanus, whooping cough, poliomyelitis. Besides, the Company has a farm and laboratory at Pimpri where Anti Snake Venom, Anti Tetanus Serum, Anti Rabies Serum, Anti Diphtheria Serum, Anti Scorpion Venom is produced. The Company also formulates pharmaceutical products, disinfectants & ointments, syrups and mixtures.

The Company has contributed significantly towards the Universal Programme of Immunisation and the Pulse Polio Immunisation Programme launched by the Govt. of India by ensuring timely supply of Oral Polio Vaccine (OPV) in sufficient quantity. The Company has WHO-GMP prequalification for its Oral Polio Vaccine (mOPV1, bOPV (1&2) and tOPV) which is a pre-qualification for supply of OPV to UNICEF. Similarly, Company ensures timely and adequate supply of all its products at a very reasonable price to all the Health Institutions/Hospitals of Govt. of Maharashtra. Specific initiatives have been taken for meeting the demands for the life saving drugs in other States, as well as in other countries. The Company plans to further step up the production of vaccine and sera as well as 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
bOPV(1&3)	Bivalent Oral Polio Vaccine	Vial	2.2ml (20 doses)
mOPV(1)	Monovalent Oral Polio Vaccine	Vial	2.2ml (20 doses)
ASVS	Anti Snake Venom Serum	Vial	10ml
AScVS	Anti Scorpion Venom Serum	Vial	10ml
ARS	Anti Rabies Serum 300 IU/ml	Vial	5 ml
ADS	Anti Diphtheria Serum 10000 IU	Vial	5 ml
ATS	Anti Tetanus Serum	Vial	1 ml

Future Product Pipe Line

- Inactivated Polio Vaccine (IPV)
- Pentavalent Vaccine (DPT + HepB + Hib)
- Tissue culture anti rabies vaccine
- Recombinant Factor VIII and Factor IX

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

Areas of Interest for Collaboration

- Inactivated Polio Vaccine (IPV)
- Pentavalent Vaccine (DPT + HepB + Hib)
- Tissue culture anti rabies vaccine
- Recombinant Factor VIII and Factor IX

Contact Details

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Location	: India	Website	: www.vaccinehaffkine.com
Postal code	: 400012		



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	

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

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

Established : **2009**

Country : **Bangladesh**

Overview of the company

Incepta Vaccine Limited (IVL) is a sister concern of Incepta Pharmaceuticals Ltd, the second largest drug manufacturer of Bangladesh.



Incepta Vaccine Ltd. started its journey in 2009 with the objective to provide quality and affordable vaccines for our people as well as for users globally. IVL has been able to create a huge impact on the local vaccine market and has thereby claimed its leadership role among developing countries.

IVL entered collaborative ventures with a number of International vaccine producers. Oral Cholera Vaccine (OCV) has been developed with the support of IVI. OCV is now undergoing the clinical trial phase. IVL is also developing various vaccines in its own R&D laboratory and some of them are in the final stages of clinical studies. Other vaccines e.g. Pneumococcal 13 strains conjugate vaccine is being developed.

IVL is poised to manufacture all the vaccines available at present in the world. We are also in the

process of producing some new generation vaccines. We have set up separate facilities for Fill Finish, Bacterial Bulk antigen, Viral Bulk Antigen, Bacterial and Viral Research and Development. These facilities are equipped with the latest machinery and well trained manpower in the biological field. At present, IVL has the yearly capacity to produce 180 million single doses.

Current Product Pipeline

(Fill finished)

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 Pediatric	Vial	0.5 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) , 10 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 (10 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 contains more than 3000 IU)
Rabix-IG	Rabies immunoglobulin	Vial	5 ml(Each ml contains more than 200 IU)
Antivenom	Polyvalent Snake venom antiserum	Vial	10 ml (Lyophilized)
Protet-IG	Human Tetanus Immunoglobulin	Vial	1 ml (Each ml contains more than 250 IU)
Normoglobin	Human Normal Immunoglobulin	Vial	10 ml (Each ml contains 50 mg IgG)

Vaxpol	Poliomeyelitis Vaccine Live (Oral). Bivalent, type 1 and 3	Vial	1 ml (10 doses)
PrevaHAV for adult	Inactivated Hepatitis A vaccine for adult	Vial	1.0 ml (Single Dose)
PrevaHAV for pediatric	Inactivated Hepatitis A vaccine for pediatric	Vial	0.5 ml (Single dose)

Future Product Pipe Line

○ Fill finished:

- Varicella Vaccine
- 23 Valent Pneumococcal Polysaccharide Vaccine
- 13 Valent Pneumococcal Conjugate Vaccine
- Human Papilloma Vaccine
- Rota Virus Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Rabies Vaccine	Undergoing				Q3/2019
Hepatitis B vaccine		Undergoing			Q4/2019
Meningococcal polysaccharide ACWY vaccine					November, 2018
Bi Valent Oral Cholera Vaccine				Undergoing	Q3/2019
Typhoid Conjugate Vaccine	To be started by 2018				Q1/2020

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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Location	: Bangladesh	Website	: www.inceptavaccine.com, www.inceptapharma.com
Postal code	: 1208		



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. ILL's veterinary and human vaccine manufacturing facilities are located at Hyderabad and Ooty in India.

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



ILL 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. ILL has research collaborations with several reputed national and international institutes including NIH, CDC, GALVMED, Pirbright Institute etc.

ILL 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
Vaxtar 5	Diphtheria, Pertussis, Tetanus, HiB and Hepatitis B vaccine	Vial	0.5 mL and 5 mL

Future Product Pipe Line

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Hepatitis A	██████████	██████			
MR	██████████	██████			
Typhoid Conjugate	██████████				
Chikungunya vaccine	██████████				
Dengue	██████				
Hexavalent vaccine	██████				

Areas of Interest for Collaboration

- Rotavirus vaccine technology
- Pneumococcal conjugate vaccine

Contact Details

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Location : **India** Website : **www.indimmune.com**

Postal code : **500 032**



INSTITUTO BIOLÓGICO ARGENTINO S.A.I.C.

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	Phase 3	Phase 3	

Areas of Interest for Collaboration

- Technology 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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Location : **ARGENTINA** Website :

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 - Multifdose	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 Vaccine (A/H5N1, A/H1N1, A/H7N9)
- Seasonal Splitted Trivalent Influenza Vaccine
- Acellular Pertussis Vaccine

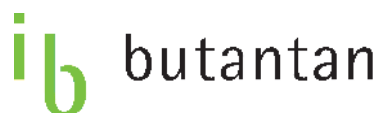
Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
A/H1N1 Influenza vaccine	██████████	██████████	██████████		
A/H5N1 Influenza vaccine	██████████	██████████	██████████		
A/H7N9 Influenza vaccine	██████████				
Seasonal Splitted Trivalent Influenza Vaccine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

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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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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Name of the company : **Institute of Medical Biology, Chinese Academy of Medical Sciences**
 Head of Institution : **Dr. Li Qihan**
 Established : **1958**
 Country : **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
	Poliomyelitis Vaccine Type I Type III in Dragee Candy (Human Diploid Cell), Live	Pill	1.0g
	Poliomyelitis(Live)Vaccine Type I Type III (Human Diploid Cell), Oral	Vial	0.5ml&1.0ml
Weisairuiji	Hepatitis A (Live) Vaccine, Freeze-dried	Vial	1.0ml
Aibiwei	Inactivated Poliomyelitis Vaccine Made From Sabin Strains	Vial	0.5ml
EntroVac	Enterovirus Type 71 Vaccine, Inactivated (Human Diploid cell)	Vial, Prefilled Syringe	0.5ml

Future Product Pipe Line

- Inactivated Influenza Virus Virolysis Vaccine
- Inactivated Japanese Encephalitis Purified Vaccine
- F-genotype Attenuated Mumps Vaccine
- Rabies Vaccine(Human Diploid cell)
- DTaP-sIPV Combined Vaccine
- Rotavirus Vaccine, Inactivated (Vero cell)

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

Areas of Interest for Collaboration

- Product export
- Vaccine development
- WHO pre-qualification

Contact Details

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

Head of Institution : **Mtro. CARLOS RELLO LARA**

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

Country : **Mexico**

Overview of the company

Birmex is a company of the Mexican Government that manufacture, imports and supply vaccines, antivenoms, reagents and medicines.

We have extensive experience in the production of biological products, which is combined with rigorous quality control of manufacture procedures. This experience results in the successful updating of the facilities, procedures and manufacture programs to meet the demand of the Health Sector for vaccines and antivenoms manufactured in accordance with Good Manufacturing Practices as a company certified by the National Regulatory Agency.

Throughout the years, Birmex has become a reliable guarantee in the supply of products for its customers, incorporating in each product and service, experience and knowledge:



- The confidence of high quality
- The commitment of a comprehensive service with tracking and total control of shipments at all times, by either land or air.
- The security of the on-time distribution to any part of the country, since Birmex is the only laboratory that delivers to the 32 states of the Mexican Republic.
- Innovation, competitiveness, honesty and integrity in each process focused on offering solutions that meet the needs of customers.
- Birmex manufactures antivenoms to respond to snakebite accidents endemic to Mexico and some species from Central and South America.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
bOPV	Bivalent oral polio vaccine	Dropper	2.0 ml (20 doses)
Td	Tetanus and Diphtheria toxoid for adults	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 if 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

- DPwT with whole cell pertussis vaccine
- Tdpa with acellular pertussis vaccine
- Flu vaccine
- Pentavalent vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
DPwT				///	Q4/2020
Tdpa	///				Q4/2020
MR / MMR	///				Q4/2024
Flu vaccine					Q4/2022 commercial lots

Areas of Interest for Collaboration

- Cell- culture based vaccines
- Scale-up process
- Transfer of Technology for the Production of vaccines: HPV, rotavirus, conjugated polysaccharides
- Development and scaling of conjugate vaccine
- Commercial representation in Mexico for vaccines
- Bulk (acquisition and sale)
- Training of personnel in production processes and quality control
- Collaboration in research
- Acquisition of seeds for production
- Registration processes Technology transfer for vaccine

Contact Details

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Name of the company : **LG Chem, Ltd.**

Head of Institution : **Jin-Soo Park**

Established : **1947**

Country : **Republic of Korea**

Overview of the company

LG Chem (LG Life Sciences merged into LG Chem as of January 01, 2017) has developed and commercialized an array of pharmaceuticals for human and animal applications over the years. Especially for vaccines, LG Chem 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, LG Chem successfully developed tetravalent DTP-based combined vaccines, DTwP-HepB(Euforvac™ Inj.) and Hib vaccine(Euhib™ Inj.), as a component of pentavalent vaccine by reconstitution with DTwP-HepB/Hib(Euforvac-Hib™ Inj.). In addition, LG Chem



developed a fully-liquid pentavalent vaccine(Eupenta™ Inj.), based on the accumulated technology and knowhow, for UN vaccine market. And year 2011, LG Chem is selected by WHO as one of tech transfer recipient of sabin IPV. Based on this new technology, LG Chem continues to develop hexavalent vaccine. Furthermore, LG Chem is developing PCV based on the conjugation technology collected during the development of Hib vaccine. Through the long development history on vaccines LG Chem accumulated a lot of experiences on vaccines and came to have very strong capability on vaccine development area. In the future, LG Chem 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
Euhib™ Inj.	<i>Haemophilus influenzae</i> type b vaccine	Vial Lyophilized	0.5/1.0 ml
Eupenta™ Inj.	Adsorbed diphtheria, tetanus, whole cell pertussis, hepatitis B and <i>Haemophilus influenzae</i> type b combined vaccine	Vial Liquid	0.5/5.0 ml

* More detailed information of LG Chem' full list of current product pipeline & future product pipeline is available at www.lgchem.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)						
LBEC0101 (Enbrel biosimilar)						Q2/2018
LBAL (Humira biosimilar)						
Zemiglo (Indication expansion for insulin combined therapy)						
Lc280126 (Myocardial infarction)						
Lc510255 (Inflammatory diseases)						
Lc541239 (Type 2 diabetes)						
ZemiStatin (Diabetes/Dyslipidemia)						Q3/2017
Highly cohesive Yvoire filler						Q2/2018

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(Hyaluronic acid) based products
- Global marketing partnership or distributionship for Fative®

Contact Details

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State : **Seoul**

Website : **www.lgchem.com**

Location : **Republic of Korea**

Postal code : **07336**



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	Presentation
		Vial/Ampoule	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

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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.

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

contribute to the human health care in the near future.

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, immunotherapics (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	Presentation
		Vial/Ampoule	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 derivat, 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

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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**

Country : **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 Taiwanese government.

The 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, PIC/S GMP bioproduction plant and expertise to develop novel vaccines and immunotherapeutics.

NIIDV's bioproduction plant aims to implement government policies for developing capability of vaccine manufacture and strengthening the infra-structure of vaccine research. To meet national health needs, we were assigned to produce BCG and antivenins. To respond to Taiwan government emergency request for vaccines against pandemic diseases, cell-based Flu and cell-based EV71 vaccine technologies have been successfully developed and transferred to local companies for further clinical development.



Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5 / 1.0 / 5.0 / 10.0 ml
BCG (contract manufacturing)	Lyophilized-Tuberculosis vaccine	Ampoule	1.5 mg, 30 doses
Antivenin (contract manufacturing)	Lyophilized- 1. Antivenin of Tr. Mucrosquamatus and Tr. Gramineus 2. Antivenin of B. multicinctus and N. naja atra 3. Antivenin of D. acutus 4. Antivenin of D. russellii	Vial	1000 t.u., 1 dose

Future Product Pipe Line

- Cell-based H5N1 flu vaccine
- Cell-based H7N9 flu vaccine
- Cell-based EV71 vaccine
- Lipoprotein-based Meningococcal B vaccine
- Adeno vector-based RSV vaccine
- HPV therapeutic vaccine
- Recombinant BCG
- Dengue vaccine
- Bivalent vaccine against hand-mouth-foot disease

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Cell-based H5N1 flu vaccine					
Cell-based H7N9 flu vaccine					
Cell-based EV71 vaccine					
Lipoprotein-based Meningococcal B vaccine					
Adeno vector-based RSV vaccine					
HPV therapeutic vaccine					
Recombinant BCG					
Dengue vaccine					
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 : **KoreaVaccine Co., Ltd.**

Head of Institution : **Choi, Duck Ho**

Established : **1956**

Country : **South Korea**

Overview of the company

KoreaVaccine(KV) is a vaccines and medical devices company in Korea. Since 1956, KV has made an effort to manufacture (fill & finish) and distribute high quality biological products as well as medical devices to achieve our vision which is 'Improvement of the contribution to the better society.'

To accomplish our vision, KV not only focuses on researching and developing new and better products, but also provides services to various biological companies in CMO, CLO, and CSO areas based on its outstanding human resource, technology and infrastructure combined with our passion and sincerity.



With an effort to become an incubator of bio-industry in Korea and lead continuous innovation in our business, KV became one of the top players in Korean vaccine market especially in pediatric segment.

For healthier society and better life, KV will continuously improve our product, and expand its global network for the well being of all stakeholders.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Kovax-Influ PF Inj. (tri, quad)	Seasonal influenza vaccine	Pre-filled syringe	0.25ml, 0.5ml
Kovax-Flu Inj. (tri, quad)	Seasonal influenza vaccine	Pre-filled syringe	0.25ml, 0.5ml
Freeze-dried BCG vaccine for percutaneous use	BCG vaccine (Tokyo172 strain)	Ampoule	12mg x 1 amp 0.15ml x 1 amp of saline solution

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

- Vaccine development
- Transfer of vaccine bulk for commercialization in Korea
- Pre-filled syringe CMO (fill & finish)
- CLO & CSO for Korean MFDS registration and local distribution

Contact Details

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

Overview of the company

Panacea Biotec is India's leading research based biotechnology Company with established research, manufacturing and marketing capabilities. 4th largest vaccine producers in India ranking amongst top 25 pharmaceutical companies in represented market share. Product portfolio includes innovative products in Oncology, Organ transplantation, Diabetes, Gastrointestinal diseases and Pediatric vaccines. Pipeline includes high barrier to entry generics in the areas of nanotechnology microparticles, Liposomes and platform drug delivery technologies. Present in over 20 countries across the world including USA and Germany through collaborations and direct presence. Company has research collaborations with leading national and international organizations. State-of-the-art manufacturing facilities for vaccines and pharmaceutical

formulations comply with the US-FDA, European and WHO cGMP standards. Bulk vaccine manufacturing facility is located in Lalru, Punjab (India), vaccine formulation and filling, anti-cancer formulation, oral solid formulation facilities are located at Baddi in Himachal Pradesh (India).



Panacea Biotec has been among the leading suppliers of vaccines to UN Agencies and Government of India. Panacea Biotec is credited for developing several vaccines first time in the world including fully liquid Pentavalent vaccine DTP-HepB-Hib (EasyfiveTT), Bivalent Oral Polio vaccine (bOPV), Monovalent OPVs Type 1 & Type 3 and recently launched World's First Fully Liquid whole cell Pertussis (wP) based Hexavalent Combination Vaccine, EasySix™.

Company has around 2,500 employees including 120 scientists working across 4 R&D centers.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Enivac HB	Recombinant Hepatitis B Surface Antigen Vaccine	Glass Vial, Glass PFS	SDV & MDV (10 Dose), PFS
DTP	Diphtheria, Tetanus and whole cell Pertussis Vaccine (Adsorbed) IP	Glass Vial	SDV & MDV (2, 5 & 10 Dose)
NovoHIB	Haemophilus Type b conjugate (PRP-TT) vaccine	Glass Vial, Glass PFS	SDV, MDV (5 & 10 Dose), PFS
Oral Polio Vaccine	Bivalent Poliomyelitis vaccine including monovalent Type1 and 3 (Oral)	Glass Vial	MDV (20 Dose)
Ecovac4	DPT-HepB, fully liquid Tetravalent vaccine	Glass Vial, Glass PFS	SDV, MDV (10 Dose), PFS
Easyfour-TT	DTP-HibTT fully liquid Tetravalent Vaccine	Glass Vial, Glass PFS	SDV, PFS
Easyfive-TT	DTP-HepB-Hib fully liquid Pentavalent Vaccine	Glass Vial, Glass PFS	SDV, MDV (10 Dose), PFS
EasySix	DTP-HepB-Hib-IPV (Salk) fully liquid Hexavalent Vaccine	Glass Vial, Glass PFS	SDV, PFS

SDV = Single Dose Vial
 MDV = Multi Dose Vial
 PSF = Pre-filled Syringe

Future Product Pipe Line

○ Vaccine

- Pneumococcal Conjugate vaccine
- Dengue recombinant lyophilized vaccine
- Sabin Inactivated Polio Vaccine (sIPV)
- Measles vaccine
- Measles & Rubella (MR) vaccine
- Varicella vaccine
- Typhoid conjugate vaccine
- Tetanus Toxoid Vaccine
- Tetanus diphtheria (reduced)
- aP based combination vaccines
- Conjugated Meningococcal Vaccine

Product Name	Pre Clinical			Clinical			Expected launch date Quarter / Year
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3	
Pneumococcal Conjugate vaccine						To start	2020
Dengue						-	2020
Sabin Inactivated Polio Vaccine (sIPV)	Under Development						2021

○ Pharmaceuticals

- Panacea Biotec exports its pharmaceutical formulations in over 30 countries including USA, Germany, Russian Federation, Turkey, Tanzania, Kenya, Syria, Serbia, Vietnam, Philippines and Sri Lanka etc. Panacea Biotec has continued its focus on development, registration and marketing of products portfolio catering to chronic therapies in private markets in several countries.
- Overall, Panacea Biotec currently has more than 90 brands in its pharmaceutical business spanning across various therapeutic segments and in different countries.
For Pharmaceutical product range, please visit our weblink <https://www.panacea-biotec.com/product-catalog>.

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.
- The company has entered into collaboration with Bionpharma Inc., USA for development, license, manufacturing and supply of complex generic products for US and Canada markets. Majority of these products will be filed in 2018 and commercialized by 2019.

New Products:

- During the year 2017-18, Panacea Biotec has launched two new products viz. Rizatriptan Oral Dispersible 5mg and 10mg Tablets and Prasugrel HCL 5mg and 10mg tablets in US markets through strategic partners in USA.
- Panacea Biotec's ANDA for Paclitaxel Protein bound particles for Injectable Suspension 100mg/vial has been accepted for review by the U.S. Food and Drug Administration (FDA). In addition, the approval process for other ANDAs filed earlier with the USFDA is in progress.
- Panacea Biotec is also building a robust pipeline of several products for filing in several other emerging markets which it will be filing in the next 1-2 years and aims to improve the accessibility and affordability of medicines.
- The company has commercialized Tacpan (Tacrolimus) & Mowell (Mycophenolate) through its indirect Wholly Owned Subsidiary - Panacea Biotec Germany GmbH.

Areas of Interest for Collaboration

- Human Papiloma Virus (HPV) Vaccine
- Rotavirus Vaccine
- New Vaccines

Contact Details

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Name of the company : **Pasteur Institute of India, Coonoor**
 Head of Institution : **Dr. S.Sivakumar, Director**
 Established : **1907**
 Country : **India**

Overview of the company

The death of a young English lady Lily Pakenham Walsh, due to hydrophobia in the year 1902 who could not get Antirabies treatment in time, led to the establishment of Pasteur Institute of Southern India. Mr. Henry Phipps, American Philanthropist donated to Lord Curzon, the then Viceroy of India, a sum of Rs.50.00 lakhs for the development of Medical Institutions, out of which, a sum of Rupees one lakh was allocated to start the Pasteur Institute of Southern India at Coonoor. The cool and equitable climate led to the choice of Coonoor as the most suitable location for the construction of the Institute. Spread over an area of 16 acres of land the Institute is situated on a grassy knoll on the upper reaches of Coonoor town amidst beautiful surroundings with lush greenery, manicured lawns and flower gardens. It has a glorious tradition of single minded dedication to alleviate the suffering of humanity by its contribution to the research and development of vaccines in the country.



Pasteur Institute of India, Coonoor is a pioneer Institute involved in the production of Antirabies Vaccine since 1907 and DPT group of Vaccines since 1982. The Institute started functioning as Pasteur Institute of Southern India, on 6th April 1907 and took a new birth as the Pasteur Institute of India and started functioning as an Autonomous Body under the Ministry of Health and Family Welfare, Government of India, New Delhi from the 10th of February, 1977. The affairs of the Institute are managed by a Governing Body. The Institute is functioning on a 'no profit no loss' basis. This Institute has been the primary contributor of DPT group of vaccines to the Universal Immunization Programme (UIP), Govt. of India since 1982.

Important Milestones achieved by PIIC as Public sector vaccine manufacturing unit.

- 1968 Launch of Trivalent (Sabin) Oral Polio Vaccine for the first time in India. The first batch of polio vaccine prepared at the Institute was launched on 06.09.1968 by Dr. Zakir Hussain, the then President of India for use in the country.
- 1970 Introduction of highly potent BPL-inactivated Rabies Vaccine for the first time in India which made the treatment easier, cheaper with fewer doses and proved to be a better vaccine than phenol inactivated vaccine.
- 1988 Release of Tissue Culture Anti Rabies Vaccine for Canine Prophylaxis.
- 2001 Release of Vero Cell Derived Purified Rabies Vaccine (TCARV) for human use at an affordable price for the first time in India by Ms. Supriya Sahu, Collector of Nilgiris on 11.07.2001.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
DPT vaccine	Diphtheria, Pertussis and Tetanus vaccine	Vial	10 doses per vial
DT Vaccine	Diphtheria and Tetanus vaccine	Vial	10 doses per vial
TT vaccine	Tetanus Toxoid vaccine	Vial	10 doses per vial
Tissue Culture Anti Rabies Vaccine	Tissue Culture Anti Rabies Vaccine (Vero Cell purified)	Vial	Single Human dose per vial

In the year 2011, the Govt. of India funded to establish cGMP facility for manufacturing DPT group of vaccines with a project cost of Rupees 137.02 crores. The establishment of cGMP project for manufacturing DPT group of vaccine is nearing completion. The proposed Green field facility for manufacturing of DPT group of vaccines, which is being established, will have total annual installed capacity of 130 million doses (mds). The following are the installed capacities for individual vaccines that are planned to be produced in the new GMP facility,

S. No.	Name of the Vaccine	Installed Capacity (million doses)
1.	DPT Vaccine	60 mds
2.	DT vaccine	15 mds
3.	TT vaccine	55 mds

Future Product Pipe Line

Currently this institute is in the process of expansion of manufacturing facility for DPT group of vaccines and also has proposal on the anvil to produce the following vaccines,

- Pentavalent Vaccine (DPT+HepB+Hib)
- Td Vaccine.

Areas of Interest for Collaboration

- Hepatitis B Vaccine (Hep B)
- Haemophilus Influenzae type B vaccine (Hib)
- Sabin Injectable Polio Vaccine (sIPV)
- Hexavalent Vaccine
- Polysaccharide Conjugate Vaccines (PCV)
- Rotavirus Vaccine (Live & Inactivated)
- Japanese Encephalitis Vaccine (JE)
- Other Vero cell based viral vaccine technologies
- R&D Facilities for vaccine development - This Institute has a strong R&D facility for the developmental studies of existing vaccines and also for newer vaccines using modern recombinant technology. This institute has fruitful collaborations with National Institutes for developing cutting edge technology for futuristic vaccines.

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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	Presentation
		Vial/Ampoule	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

Contact Details

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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 and 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.

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 products 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 3%, Sodium thiosulfate 25%, Methylene blue injection 5%, Diphenhydramine injection 5% and Edetate Calcium Disodium 20% solution for injection.

- Biosimilar product (EPIAO Injection 4,000 IU/ml) for human use.

Current Product Pipeline

Product Name	Description	Type Vial/ Ampoule	Presentation 0.5/1.0/5.0/10.0 ml
BCG Vaccine	lyophilized product of 0.05 mg/dose and 10 doses per vial	vial	0.5 ml
Rabies vaccine (TRCS Speeda)	lyophilized product of 0.5 ml per dose in 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, Ophiophagus hannah, Bungarus fasciatus and Bungarus candidus</i>) - Hemato polyvalent antivenin (<i>Calloselasma rhodostoma, Trimeresurus albolabris, 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 2019

- **JE Vaccines** : lyophilized product of 0.5 ml per dose in vial. Ready to be filled bulk from Liaoning Cheng Da Biotechnology Co., Ltd. (CDBIO).
- **EPIAO Injection** : Human Recombinant Erythropoietin Alfa Injection, 1 ml (4,000 IU), produced by recombinant DNA in Chinese Hamster Cells (CHO). Ready to fill bulk from Shenyang Sunshine Pharmaceutical Co., Ltd (3SBio).

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
JE Vaccines					2019
EPIAO Injection					2020

Areas of Interest for Collaboration

- New TB vaccine

Contact Details

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Postal code	: 10330		



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	Inactivatedvaccine	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	Phase 4	Phase 5	
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						
Tetravalent 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 now 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 across the globe; 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 world's top five vaccine companies (in terms of volume) along with 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. Its manufacturing facilities conform to WHO cGMP requirements and till date SII's 22 vaccines are prequalified by WHO/Geneva.

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. Its manufacturing facilities conform to WHO cGMP requirements and till date SII's 22 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 & 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
Rubella *	Rubella Vaccine Live (Lyo.)		(0.5ml per dose)
MR *	Measles and Rubella Vaccine Live (Lyo.)		
MMR *	Measles, Mumps and Rubella Vaccine Live (Lyo.)		
IPV *	Inactivated Poliomyelitis Vaccine	Vial	1, 2 & 5 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 / 10mcg	Vial	1 & 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 & 80mg /vial
Vero Rabies	Vero Rabies Vaccine	Vial	1 ml / 1 dose
Rmab	Rabies Human Monoclonal Antibody (rdNA)	Vial	100IU/2.5ml & 250IU/2.5 ml
Rotavirus	Rotavirus Vaccine (Live Attenuated Oral)	Vial	1 & 2 dose (2.5ml per dose)

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

Future Product Pipe Line

- DTaP Vaccine
- TdaP Vaccine
- Pneumococcal Polysaccharide Vaccine
- Measles Vaccine (Dry Powder)
- Aerosol Measles vaccine
- Rotavirus Vaccine (Liquid)
- Pentavalent Meningococcal Conjugate Vaccine (ACYWX)
- Human Papiloma Virus Vaccine (HPV)
- Recombinant BCG (rBCG) Vaccine
- Dengue Tetravalent Vaccine
- Hexavalent (DTP Hep B Hib IPV) 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 S.A.**



Head of Institution : **Alejandro Gil (CEO)**

Established : **2010**

Country : **Argentina**

Overview of the company

Sinergium Biotech is an Argentine biopharmaceutical company specialized in the research, development, production and marketing of vaccines and highly complex biopharmaceutical products. Sinergium Biotech carries forward an innovative production model of strategic alliances with national and international laboratories allowing: the transfer and availability of state-of-the-art technologies, the autonomy in the production and supply of strategic products which had to be imported before now, the creation of new jobs with highly qualified professionals, the replacement of imports and the generation of a significant export potential.



In July 2015, bioCSL (a CSL company) and the influenza vaccines of Novartis joined forces to create Seqirus, now the second largest influenza vaccine company in the world. Alliances with North American companies followed this agreement: Pfizer for the production of pneumococcal conjugate vaccine and MSD (Merck, Sharp & Dohme, Argentine subsidiary of Merck & Co) for the production of tetravalent vaccine against the HPV.

Sinergium Biotech counts with a wide network of offices in all Latin American countries which facilitates and allows integration in the marketing of its products as well as of those it represents for third parties. This network allows an expeditious approach to the private and public markets of these countries that demand

vaccines and high quality biotechnological products.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 0.5/ 1.0 / 5.0 / 10.0 ml
Virafllu	Inactivated trivalent seasonal flu vaccine	PFS	0.5 ml
Fluxvir	Inactivated trivalent adjuvanted seasonal flu vaccine	PFS	0.5 ml
Silgard	HPV quadrivalent vaccine	PFS	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

- Marketing products in LATAM
- Tech transfer of new products for LATAM markets

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

Head of Institution : **Mr. Weidong Yin**

Established : **2001**

Country : **P.R. China**

Overview of the company

Sinovac Biotech Co., Ltd. is one of the leading bio-pharmaceutical companies in China, focusing on research, development, manufacturing and commercialization of human vaccines that protect against infectious diseases.

In 2017, Its Healive® - Inactivated Hepatitis A Vaccine (Human Diploid Cell), has passed the assessment under WHO Prequalification procedures. In 2016, Inlive®, an innovative vaccine developed by Sinovac against HFMD caused by EV71 was commercialized in China. Sinovac is internationally recognized for the successful development of the pandemic influenza vaccine against H1N1 virus in 2009. Sinovac is also the only company in China to produce an avian flu vaccine (H5N1) for human for government stockpiling program, to develop a SARS vaccine candidate which has been tested in a phase I human clinical study in 2014.



Sinovac is currently developing many products including a Sabin-strains inactivated polio vaccine, pneumococcal polysaccharides vaccine, quadrivalent Influenza Vaccine, varicella vaccine etc.

Sinovac has been working with 37 countries to register and export its vaccines products. While we are executing our business plan to "supplying vaccines to eliminate human diseases", Sinovac is open and flexible for any potential collaboration with participants in the global vaccine industry.

Current Product Pipeline

Product Name	Description	Type	Presentation
		Vial/Ampoule	0.5/ 1.0 / 5.0 / 10.0 ml
Healive® WHO Prequalified in 2017	Hepatitis A Vaccine (Human Diploid Cell), Inactivated	Vial/ Pre-filled Syringe	0.5ml/ 1.0ml
Bilive®	Hepatitis A & Hepatitis B Combined Vaccine	Vial/ Pre-filled Syringe	0.5ml/ 1.0ml
Anflu®	Influenza Vaccine (Split Virion), Inactivated	Vial/ Pre-filled Syringe	0.25ml/ 0.5ml
Inlive®	Enterovirus Type 71 Vaccine (Vero cell), Inactivated	Vial/ Pre-filled Syringe	0.5ml/ 5ml
Panflu®	Pandemic Influenza Vaccine (inactivated, adjuvanted)	Vial	0.5ml
Mumps	Mumps Vaccine, Live	Vial	0.5ml

Future Product Pipe Line

- sIPV, Poliomyelitis Vaccine (Vero Cell), Inactivated, Sabin Strain
- PPV23, 23-valent Pneumococcal Polysaccharide Vaccine
- QIV, Quadrivalent Influenza Vaccine
- Varicella Vaccine

Product Name	Pre Clinical			Clinical			Expected launch date Quarter / Year
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3	
sIPV, Poliomyelitis Vaccine (Vero Cell), Inactivated, Sabin Strain							2020
PPV23, 23-valent Pneumococcal Polysaccharide Vaccine							2020
QIV, Quadrivalent Influenza Vaccine							2020
Varicella Vaccine							2019

Areas of Interest for Collaboration

- Strategic collaboration on vaccine regulatory approval and distribution outside of China
- Overseas Vaccine Product Localization
- Vaccine co-development Cooperation
- Merger and Acquisition

Contact Details

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Name of the company : **SK bioscience Co., Ltd.**

Head of Institution : **Mr. Jaeyong Ahn**

Established : **2018**

Country : **Republic of Korea**

Overview of the company

SK bioscience, recently spun off from SK Chemicals as a subsidiary, is a member of SK Group which is the second largest company group in Korea. After successfully entering the vaccine industry as the number one vaccine distributor in Korea through the merger with a blood preparation and vaccine-specialized pharmaceutical company since 2002, SK bioscience has established its own R&D capabilities and launched cell culture-based, trivalent and quadrivalent influenza vaccine, SKYCellflu®, in 2015 and 2016, respectively.



A state-of-the-art vaccine manufacturing facility of SK bioscience (L House), located in Andong, has highly advanced and efficient manufacturing capabilities in producing multiple types of vaccines utilizing its multi-modular and single-use production system. The manufacturing facility started its production of various vaccine products including cell-culture derived influenza vaccines in 2014.

In commitment to contribute to public health and based on its established R&D and manufacturing capabilities, SK bioscience has entered into different types of partnerships with organizations such as the International Vaccine Institute, Sanofi Pasteur, and PATH etc.

Current Product Pipeline

Product Name	Description	Type Vial/ Ampoule	Presentation 0.5/1.0/5.0/10.0 ml
SKYCellflu® Trivalent	Cell culture derived trivalent inactivated subunit influenza vaccine	Prefilled syringe and vial	0.25mL/0.50mL
SKYCellflu® Quadrivalent	Cell culture derived trivalent inactivated subunit influenza vaccine	Prefilled syringe and vial	0.50mL
SKYZoster® Inj.	Live attenuated varicella zoster vaccine for shingles in adult	Vial	0.50mL
SKYVaricella® Inj.	Live attenuated varicella zoster vaccine for chicken pox in children	Vial	0.50mL

Future Product Pipe Line

- Pneumococcal vaccine
- Human Papillomavirus vaccine
- Rotavirus vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Pneumococcal vaccine					
Human Papillomavirus vaccine					
Rotavirus vaccine					

Areas of Interest for Collaboration

- Global Partnership for distributorship
- Out/In-Licensing of vaccine products & platform technology
- Co-development of vaccines projects
- Contract Development and Manufacturing

Contact Details

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Name of the company : **St. Petersburg Scientific Research Institute of Vaccines and Serums (SPbSRIVS)**

Head of Institution : **Victor Trukhin**

Established : **1938**

Country : **Russia**

Overview of the company

St. Petersburg Scientific Research Institute of Vaccines and Serums under Federal Medical Biological Agency of Russia has been conducting research and development and producing preventive, diagnostic, and therapeutic medications for more than 80 years. SPbSRIVS has highly skilled research and production staff and uses state-of-the-art technology to offer products that meet all existing global standards. SPbSRIVS is a major supplier of therapeutic, preventive, and diagnostic medications to the markets in Russia and the CIS.



Our key products are vaccines against influenza and tuberculosis allergen (tuberculin), a preparation used in the diagnosis of tuberculosis.

The strategic goal pursued by SPbSRIVS is to retain a leading position in the biomedical industry both in Russia and abroad. Only by achieving the set goal, we will ensure the sustainable development of the Company and achieve the optimal return on investment. In this endeavor, we carefully select our partners and consistently strive to maintain the highest standards of doing business.

OUR MISSION

- Protection of future generations through the prevention of viral diseases and the constant search for new ways to improve the quality of life and health in Russia and around the world.

- Support and promotion of vaccination as the most effective way to prevent viral diseases and epidemics

Current Product Pipeline

Product Name	Description	Type Vial/ Ampoule	Presentation 0.5/1.0/5.0/10.0 ml
FLU-M	Inactivated influenza split vaccine	Vial	0,5 ml

Future Product Pipe Line

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

Areas of Interest for Collaboration

Contact Details

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

Head of Institution : **Dr Morena Makhoana**

Established : **2003**

Country : **South Africa**

Overview of the company

Biovac is a South African vaccine development and manufacturing company formed as a Public-Private Partnership with the South African Government in 2003.

Our vision is to be a health focused Centre of Excellence rooted in Africa for the development and manufacture of quality vaccines and biologicals for Africa and the developing world's needs. Biovac's mandate is to ensure that the country has the domestic manufacturing capacity to respond to local and regional vaccine needs and for the supply of quality products.



Biovac has built a modern, world class and state of the art manufacturing site located in Cape Town, making it one of the select few licensed vaccine-manufacturing facilities in Africa.

Biovac has built capacity and know-how in conjugate vaccine development, transferring its Haemophilus Influenza type B conjugate vaccine technology to three partners in Asia and the US. Biovac is partnering with PATH and Inventprise to develop a novel multivalent Group B Streptococcus (GBS) conjugate vaccine.

Strategic partnerships is at the heart of Biovac's success in building local capacity in Africa. Technology transfers are in progress with two vaccine multinational companies for local fill finish of a hexavalent vaccine and a pneumococcal vaccine.

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

- Group B Streptococcus (GBS)

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
Group B Streptococcus Vaccine	Current	2020	TBD	TBD	TBD

Areas of Interest for Collaboration

- 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
- Fill/finish partnership of product for local and regional markets
- Sourcing finished products for the local and regional 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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Name of the company : **Holding Company for Biological Products and Vaccines (VACSERA)**

Head of Institution : **Dr. Heba Wali**

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

Country : **Egypt**

Overview of the company

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 company 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	Presentation
		Vial/Ampoule	0.5/ 1.0 / 5.0 / 10.0 ml
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
Typhoid vaccine	Formaldehyde killed Salmonella typhi	Vial/amp	0.5 ml & 10 ml
Meningococcal AC vaccine	Purified polysaccharide from Niesseria meningitides of types A & C	Vial	10 ml & 25 ml
Rabies vaccine for human use	Freeze dried rabies vaccine vero cell	Vial	0.5 ml
Sera			
Polyvalent anti-scorpion serum	Anti-scorpion serum (liquid / lyophilized)	Amp	1 ml
Snake venom antiserum polyvalent (liquid / lyophilized)	Polyvalent anti-snake serum Polyvalent	Vial	10 ml
Polyvalent anti-viper venom serum (lyophilized)	anti-viper serum	Amp Vial	5 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
Tetanus 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
II. Biopharmaceuticals			
Insulin Mix	Human insulin – Mix (100 I.U.)		10 ml
BCG-T	Effective treatment for some non-invasive bladder cancers. It's given directly into the bladder (intravesical)		3 ml
Abevac	Bee venom		1 ml

Future Product Pipe Line

Vaccines

- Haemophilus influenza vaccine
- Penta vaccine (DTPw – HB – HIB)
- Bi-valent OPV
- Meningococcal vaccine AC
- HB
- IPV

Veterinary Vaccines

- Veterinary influenza vaccine (Avian Flu)
- Newcastle vaccine
- Gomboro vaccine
- Viral pneumonia vaccine
- Rio vaccine

Blood Derivatives:

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

Others:

- AD 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
- Capacity building (training, technical support and funding)
- Engagement with key experienced bodies in the field

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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 <i>Echis Ocellatus</i> 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 <i>Naja kouthia</i> 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 <i>Daboia russellii</i> 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

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Name of the company : **Walvax Biotechnology Co., Ltd**



Head of Institution : **Yunchun Li, Chairman**

Established : **2001**

Country : **P. R. China**

Overview of the company

Established in 2001, Walvax Biotechnology Co., Ltd. ("Walvax") is a listed fast-growing private company mainly engaged in research, development, manufacture and distribution of biopharmaceutical products with a leading industry position for innovative human vaccine in China. In the past 17 years, Walvax has established a rich product pipeline for vaccine and constructed an industry leading R&D and commercialization technology platforms and assembled a talented technology and management team with domestic and overseas experiences.

Walvax's largest state-of-art manufacturing base is located in Yuxi, a southwestern city in China, with close to one million-square footage facility, producing all 7 vaccine products currently on the market in China and worldwide. Meanwhile, the

base is being expanding to four candidates under late stage development which are expected to be coming soon in the next 1~2 years.



Globally, Walvax has exported various products to many countries, including the United States, Indonesia, Egypt, Bangladesh, Nigeria, etc. Besides, Walvax has established partnerships with the key international organizations such as DCVMN, WHO, BMGF, GAVI and CHAI. In 2015, Shanghai Zerun, a subsidiary company of Walvax, acquired 5 million USD in project funds from the Gates Foundation in order to accelerate its progress in the R&D, commercialization and WHO PQ process of its bivalent HPV vaccine.

Current Product Pipeline

Product Name	Description	Type	Presentation
		Vial/Ampoule	0.5/ 1.0 / 5.0 / 10.0 ml
Hib	Haemophilus Influenzae Type b Conjugate Vaccine	Vial & PSF	0.5 ml
Men A/C Polysaccharide	Group A and C Meningococcal Polysaccharide Vaccine	Vial	0.5 ml
Men A/C Conjugate	Group A and C Meningococcal Polysaccharide Conjugate Vaccine	Vial	0.5 ml
Men ACYW135 Polysaccharide	Group ACYW135 Meningococcal Polysaccharide Vaccine	Vial	0.5 ml
PPSV23	23-valent Pneumococcal Polysaccharide Vaccine	PSF	0.5 ml
DTaP	Diphtheria, Tetanus and Acellular Pertussis Combined Vaccine, adsorbed	Vial	0.5 ml

Future Product Pipe Line

- 13-valent Pneumococcal Polysaccharide Conjugate Vaccine
- Human Papillomavirus Vaccine
- Group ACYW135 Meningococcal Polysaccharide Conjugate Vaccine

Product Name	Pre Clinical	Clinical			Expected launch date Quarter / Year
		Phase 1	Phase 2	Phase 3	
13-valent PCV-TT					2019
HPV-2 (16/18)					2019
HPV-9					2022
Men ACYW135 Conjugate					2022

Areas of Interest for Collaboration

- Agency collaboration of finished product
- Secondary packaging
- Bulk transfer
- Tech transfer
- Co-development
- In- and out-licensing opportunities
- CRO and CMO

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Postal code	: 650106		



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

Head of Institution : **Mr. Steven Gao**

Established : **March, 2005**

Country : **China**

Overview of the company

Xiamen Innovax Biotech Co., Ltd. (INNOVAX), with its premises located in coastal city in East China, was established in 2005. Being wholly owned subsidiary of Beijing Wantai Biological Pharmaceutical Co., Ltd. under the Yang Sheng Tang Group, INNOVAX is dedicated in developing, manufacturing of innovative vaccines, with the mission of providing high-quantity and affordable innovative vaccine for people in need worldwide.



There are two manufacturing sites and facilities respectively for HEV and HPV in INNOVAX, with designed capacity of 5 million doses per year and 30 million doses per year.

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[®] was launched in China in October 2012. In addition, INNOVAX is working on developing HPV vaccine series, an HPV 16/18 bivalent Vaccine--Cecolin[®] has submitted for BLA review in China, an HPV 6/11 bivalent Vaccine in post phase II clinical trial stage and another HPV 9-valent

Vaccine in phase I clinical trial.

Current Product Pipeline

Product Name	Description	Type Vial/Ampoule	Presentation 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®)	2002-2007	2010-2011	2011-2012	2012-2018	2019
HPV 6/11 bivalent Vaccine	2002-2009	2013-2016	2016-2017	2019-2021	2024
HPV 9-valent Vaccine	2012-2015	2018-2019	2019-2020	2020-2024	2025

Areas of Interest for Collaboration

- Licensing
- Overseas distribution
- Product co-development

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Name of the company : **Zydus Cadila**
 Head of Institution : **Mr. Pankaj R Patel**
 Established : **1995**
 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
VacTyph	Vi capsular polysaccharide typhoid vaccine	Vial & PFS	0.5 ml
ZyVAC TCV	Typhoid-TT conjugated vaccine	Vial	0.5 ml
Vaxirab N	Purified chick embryo cell culture rabies vaccine	Vial	1 ml
Vaxiflu - 4	Inactivated quadrivalent influenza vaccine (split virion)	Vial & PFS	0.5 ml

Future Product Pipe Line

- MR vaccine
- MMR vaccine
- Varicella vaccine
- Measles vaccine
- Tetanus toxoid
- DTwP
- Anti-rabies mAbs
- Pentavalent (DTwP-Hib-Hep B) vaccine
- MMRV vaccine
- HPV vaccine
- Hepatitis A vaccine
- Hepatitis B 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							Q4 2018
Varicella vaccine							Q2/2019
Trivalent influenza vaccine							
Measles vaccine							
Tetanus toxoid							
DTwP vaccine							
Anti-rabies mAbs					Ongoing		Q2/2019
Pentavalent (DTwP-Hib-Hep B) vaccine					Ongoing		Q3/2019
Hepatitis B vaccine					Ongoing		Q4/2019
MMRV vaccine					Ongoing		Q2/2020
HPV vaccine							Q4/2020
Hepatitis A vaccine		Yet to be initiated					Q1 2021
Hepatitis E vaccine		Yet to be initiated					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 vaccine
- Malaria vaccine
- Therapeutic cancer vaccines
- Therapeutic metabolic disease vaccines
- RSV vaccine
- Thermostable vaccine technologies
- New adjuvants

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List of Member Organizations

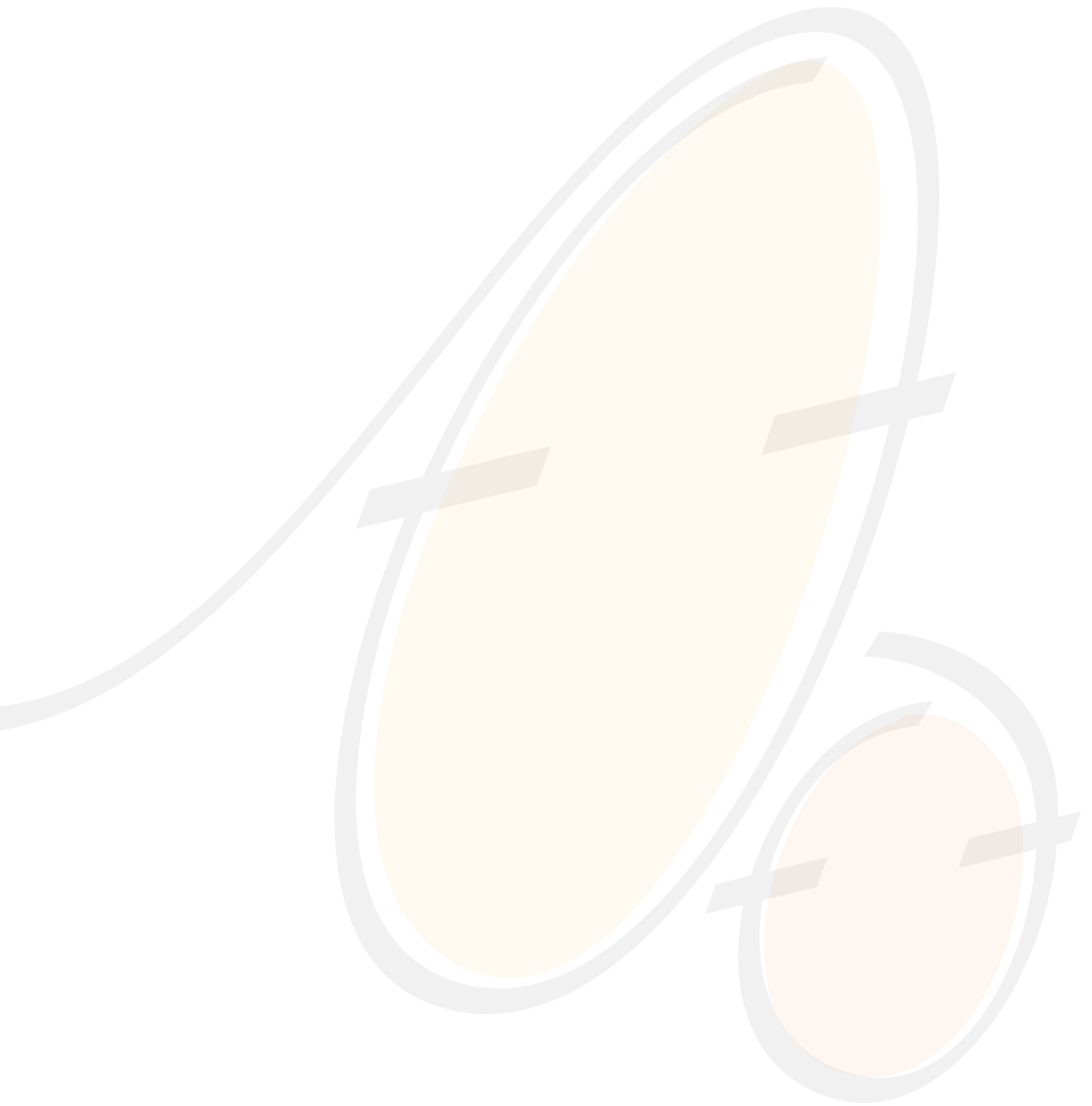
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