

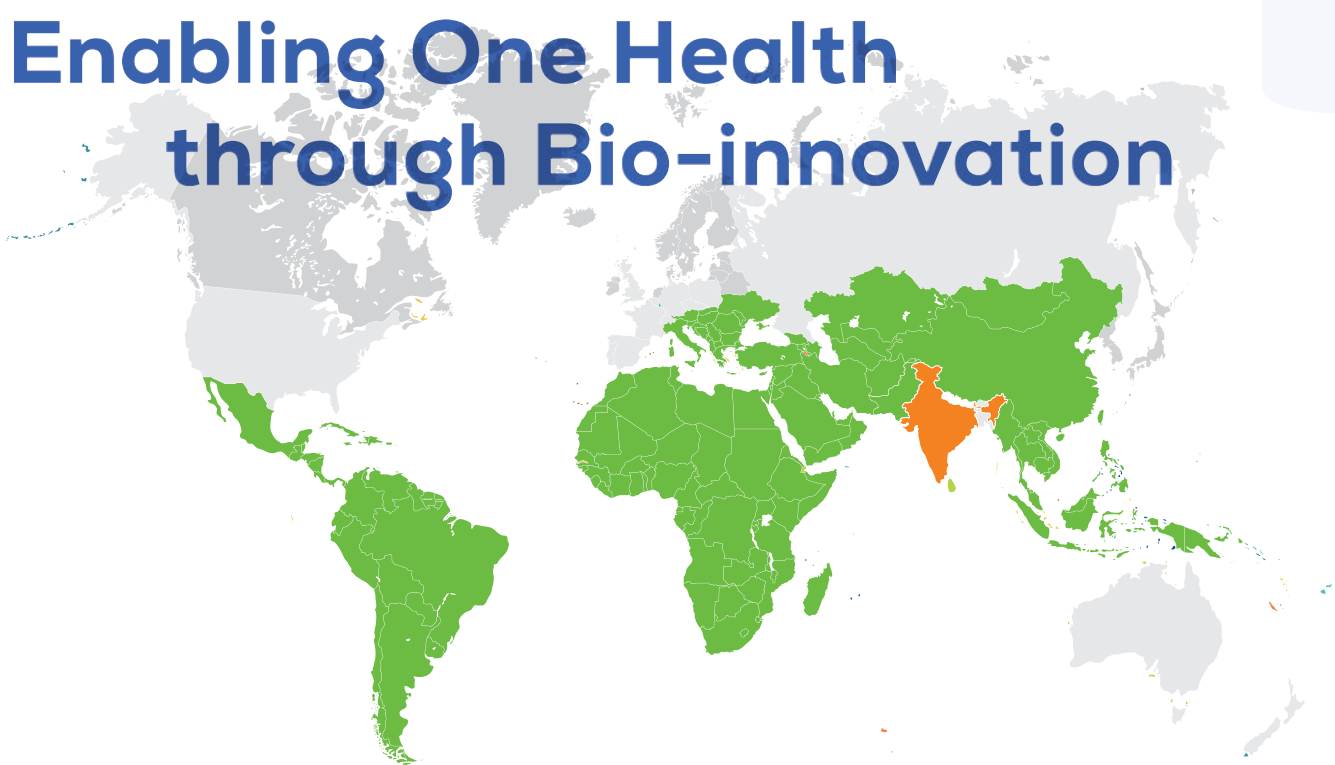
Should we be prepared for the next pandemic?

Is One Health the obvious answer?

If Yes, then

Techinvention[®] is here to help

Enabling One Health
through Bio-innovation

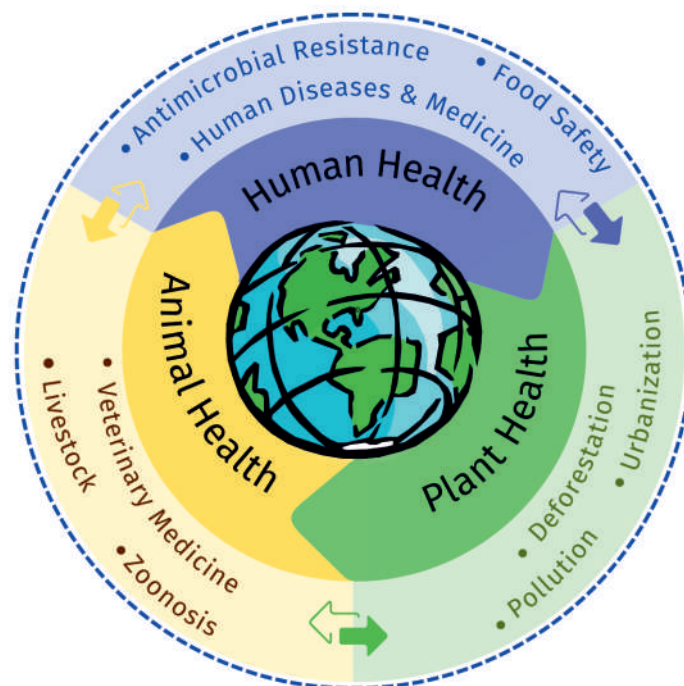




AMR and One Health

AMR continues to severely affect global health and the economy. It represents one of the leading public health threats of the 21st century, which is exacerbated by the overuse and misuse of antibiotics worldwide. The unabated spread of AMR could also result in several bacterial pathogens becoming more lethal. It is responsible for causing 700,000 deaths annually. It is predicted that more than 10 million people will die per year due to AMR infections by 2050.

The SARS-CoV-2 pandemic has further intensified the AMR crisis due to the atrocious use of antibiotics in treating COVID-19 patients. There is also increasing recognition of the relationships between human and animal health, food safety, and environmental sectors in both the evolution and solution to the AMR problem. It is therefore essential to take the One Health approach to effectively address the AMR issue.





Our Mission

“Access to Essential Vaccines and Novel Biologics Should Not Only be the Privilege of Just the Affording Few”

Health equity for all



Our Vision

Enabling One Health through Bio-innovation

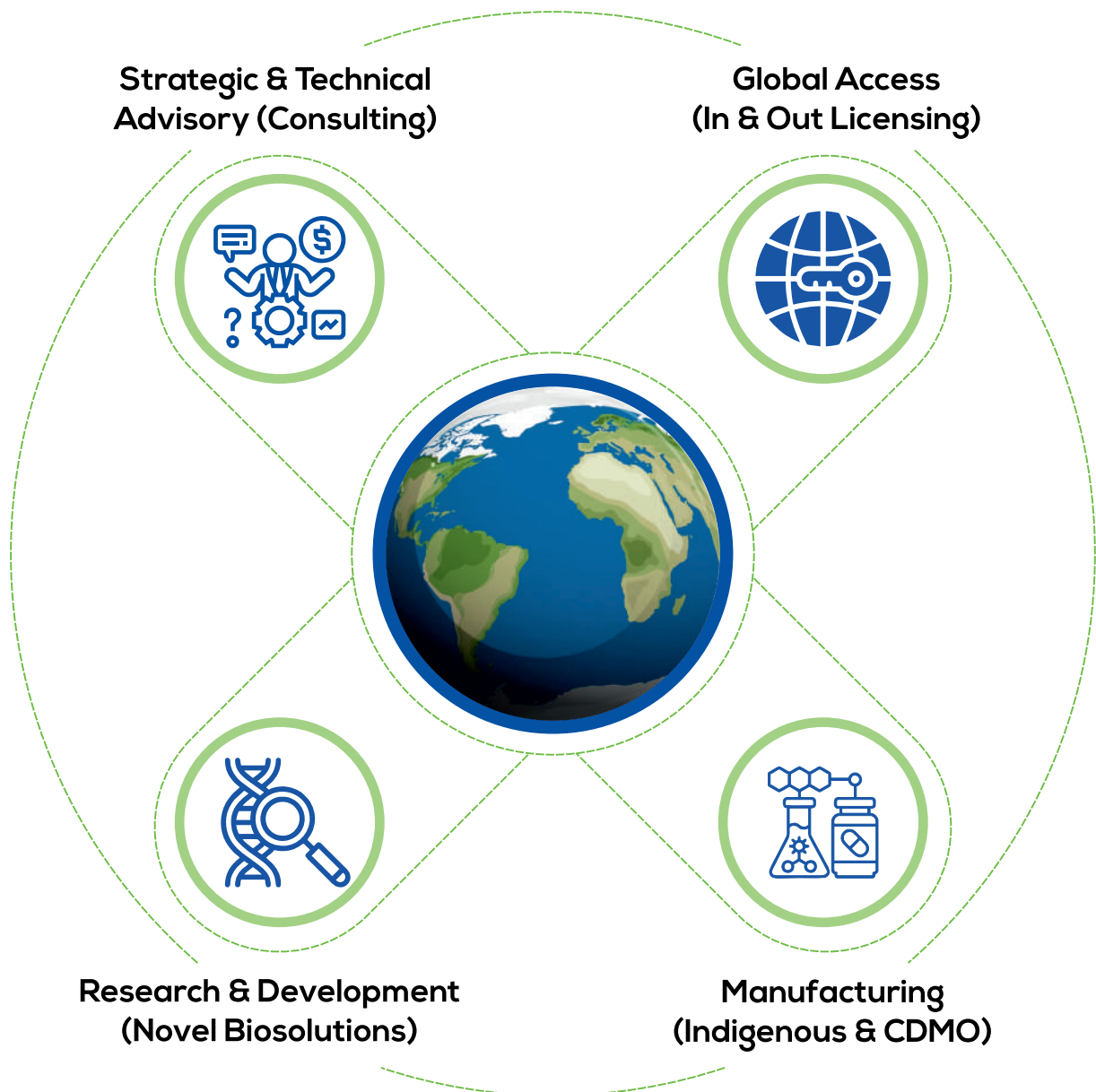
- **Affordable**
- **Accessible**
- **Acceptable**





TechInvention's Approach

Our Multipronged Approach to One Health





1 Strategic & Technical Advisory (Consulting)

We offer our expertise and support in capacity building to enable local manufacturing of biologics and vaccines in LMICs.

Our key areas are:

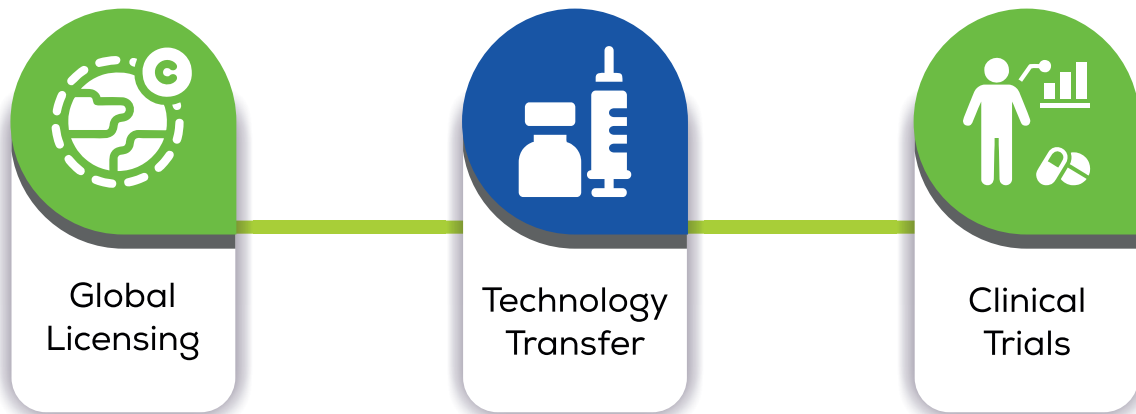




2 Global Access (In & Out Licensing)

Through our network of partners in 20+ countries, we can help in providing compliant and affordable technology and also support you with local clinical trials, regulatory licensure, IP services (patent drafting, patent filings, freedom to operate analysis, non-infringement opinion, prior art analysis, patentability analysis, and prosecution of patent application in India and other countries), and supplies of vaccines and novel biologics.

Our key areas are:



We facilitate in-licensing and out-licensing partnerships that bring together companies with complementary competencies to strengthen pipelines, achieve economies of scale, advance technologies, and introduce commercial products to market.



Clinical Trial Pipeline- Vaccine Registration in India

Vaccine candidate	Study title
Cholera	A phase III, open label, multicentre, parallel group, randomised clinical study to compare the immunogenicity and safety of Euvichol-Plus [®] with Shanchol [™] in healthy adults and children above the age of one year.
Varicella	A prospective, randomised, single blind, parallel, active controlled, multicentre, non-inferiority phase III study to evaluate the immunogenicity and safety of live attenuated varicella vaccine of Sinovac Biotech Ltd., China compared to Variped [®] (MSD Pharmaceuticals Pvt. Ltd., India) in healthy paediatric subjects in India.
Tetanus, Diphtheria, and Pertussis	A multicentre, randomised, observer-blind, non-inferiority, phase III study to evaluate the immunogenicity and safety of Boostagen RED [™] by BioNet-Asia compared to Adacel [®] by Sanofi Pasteur Ltd. in healthy subjects aged 4-65 years.
Influenza	A randomised, multicentre, phase III, comparative clinical trial to evaluate the safety and immunogenicity of quadrivalent influenza vaccine manufactured by SPbSRIVS and Influvac [®] Tetra of Abbott in healthy adult human subjects.

Vaccine candidate	Clinical trial related document preparation and submission to CDSCO	Approval of clinical trial by SEC at CDSCO	Clinical trial NOC and conduct of clinical trial	Clinical study report submission to CDSCO	Approval of clinical study report	Marketing authorization
Cholera	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████
Varicella	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████
Tetanus, Diphtheria, and Pertussis	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████
Influenza	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████	████████████████████



3 Manufacturing (Our Indigenous Pipeline & CDMO)

To better serve the biopharmaceutical global market and enable scale-up of our indigenous R&D products, Virchow Biotech Pvt. Ltd. and TechInvention Lifecare Pvt. Ltd. formed a joint venture VirchowTech, dedicated to the scale-up and commercial production for vaccines and biologics. The business generates synergy by leveraging optimal use of the extensive resources to enable capacity building and affordability.

VirchowTech is home to an ISO 13485:2012 and WHO-GMP-certified state-of-the-art manufacturing facility with a highly innovative and motivated research team and a manufacturing staff who will not settle for anything less than the highest quality. The manufacturing set up encompasses production units, testing laboratories, research and development facilities, warehouse, and packaging divisions.





Biotherapeutics

Monoclonal Antibodies - Phage Display Technology

Target pathogen	R & D	Proof-of-concept studies	Preclinical studies
SARS-CoV-2	████████████████████		
Chikungunya virus	██████████		
Cytomegalovirus	██████████		
Dengue virus	██████████		

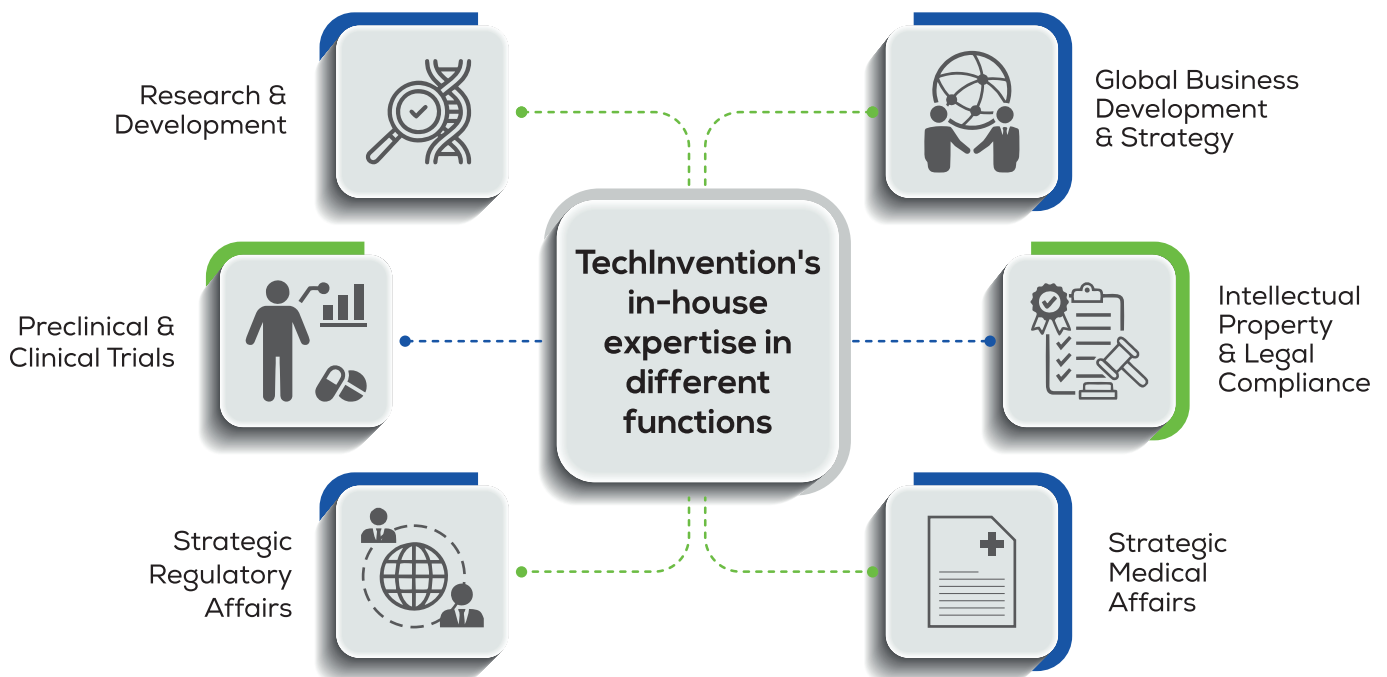
Phage-encoded lysins - Recombinant Technology

Target pathogen	R & D	Proof-of-concept studies	Preclinical studies
Uropathogenic <i>E. coli</i>	████████████████████		
<i>A. baumannii</i>	██████████		
<i>P. aeruginosa</i>	██████████		

**E. coli* - *Escherichia coli*, *A. baumannii* - *Acinetobacter baumannii*, *P. aeruginosa* - *Pseudomonas aeruginosa*, SARS-CoV-2 - Severe acute respiratory syndrome coronavirus-2



Expertise



Culture

TechInvention has been certified for two consecutive years (2021 & 2022) as Great Place To Work®, which is the gold standard and unrivaled worldwide when it comes to employer brand recognition.





Why Work with TechInvention ?

1

India has highest number of WHO PQ vaccines and manufacturers.
TechInvention has arrangements with most of them including WHO PQ manufacturers from other developing countries

2

TechInvention's facility designs are highly compliant and optimizes capital and operational costs making products affordable

3

Access to other recombinant and conjugate vaccines and technologies

4

Hand holding all through the project



5

Deployment & training of technical manpower

6

Strong non-infringing intellectual property

7

Access to biotherapeutics such as monoclonal antibodies and lysins for infectious diseases

8

Access to recombinant platform technologies for targeting WHO critical category of priority pathogens

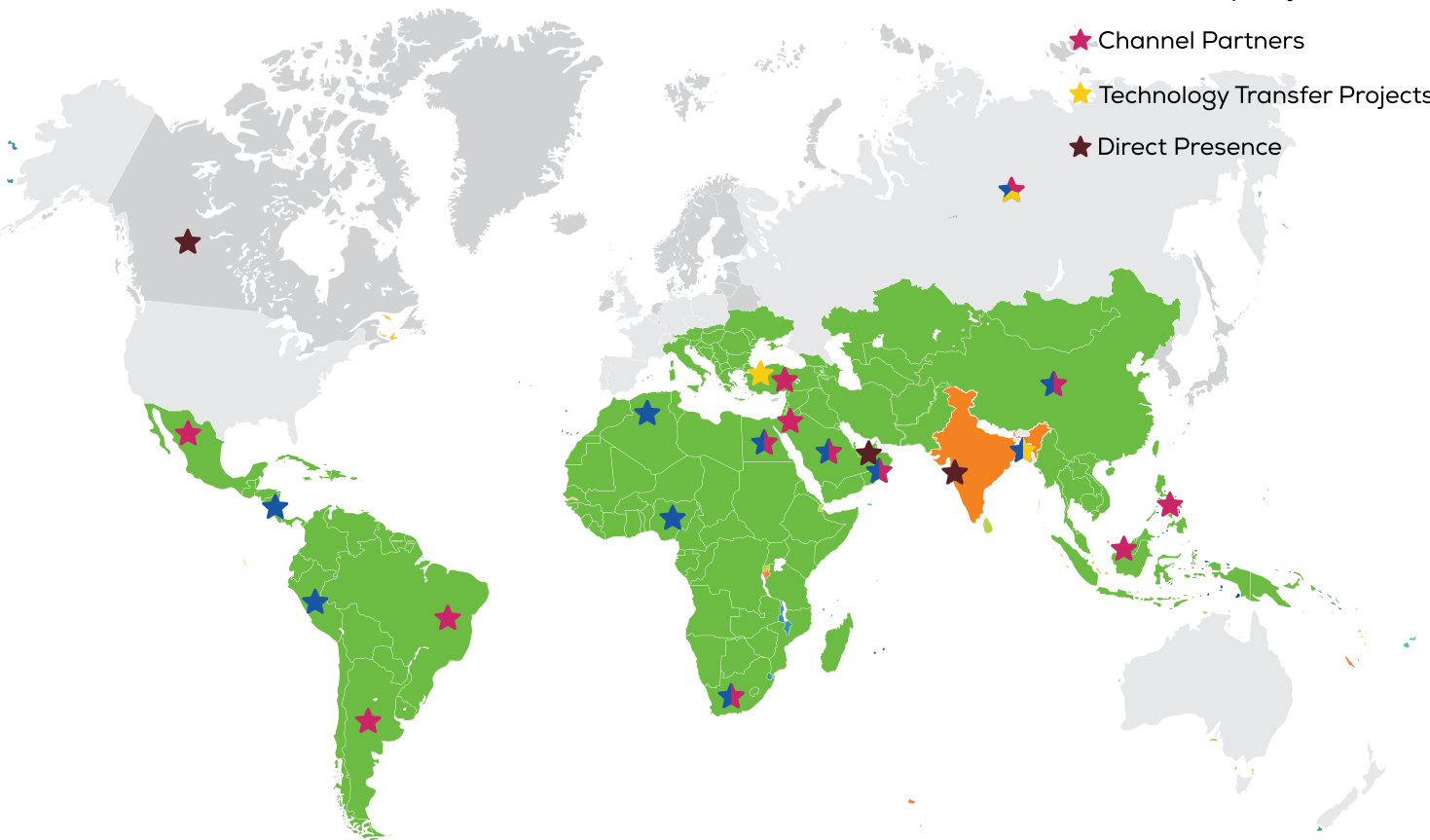
9

Experienced team with prowess and proficiency in commercial scale manufacturing of diagnostics, vaccines, & biotherapeutics



Global Projects and Partners

- ★ Consultancy Projects
- ★ Channel Partners
- ★ Technology Transfer Projects
- ★ Direct Presence



HBL Biotech Limited <small>(Subsidiary of HLL Lifecare Limited (A Government of India Enterprise))</small>	DIOC BIOTECH	INDIAN IMMUNOLOGICALS LIMITED	CPL BIOLOGICALS PVT. LTD.	BE Biological E. Limited <small>Celebrating Life Every Day</small>	zydus Dedicated To Life	Yapan bio	Dr.Reddy's
Abbott	eubionics	SK bioscience	biol	pharma niaga	bigi mefar	Boston Biopharma	PHILEX PHARMACEUTICALS
SINERGium Biotech	HACETTEPE UNIVERSITY	BioVaccines <small>Advancing Health through Vaccines</small>	EMRE ECZA Emre Ecza	СПБНИИВС	MECHNIKOV <small>Pharmaceuticals</small>	VIZ.CARRA PHARMACEUTICALS	BIOVAC <small>World of Vaccines</small>
INNOVA SALUTEM	mspharma	Medmark <small>Indian Pharmaceutical L.L.C.</small>	GENNECS	NIBM	kexmen	NOVOBIOS <small>Novo Biosolutions Inc.</small>	VACSERA
SINOVAC 科兴 <small>为人类清除疾病提供疫苗 Health Protection by Vaccines for Everyone</small>	sistar Indonesia <small>Indonesian Biotech Co.</small>	ADB <small>ASIAN DEVELOPMENT BANK</small>	BioNet		INDOVAX	NIAB <small>National Institute of Animal Biotechnology</small>	



Our Stellar 1st

1. Enabled setting up the 1st state-of-the-art vaccine manufacturing facility in Central America from concept-to-commercialization
2. Set-up of the 1st R & D centre & technology transfer of rHBsAg vaccine to Hacettepe University, Ankara, Turkey
3. Secured 1st long term supply contract of a human vaccine – NUPCO (Saudi Arabia) from a BRICS country
4. Developing 1st novel paediatric combination vaccine (Hexa) with a cross border partnership from 2 BRICS countries
5. Enabled 1st technology transfer of Hib conjugate vaccine into a CIS country along with facility design
6. Bringing in to India, the world's first and only oral cholera vaccine in LDPE unidose
7. Enabled manufacturing of India's 1st Hepatitis A vaccine at Biological E. Ltd., Hyderabad
8. Bringing the world's 1st recombinant pertussis vaccine to India
9. Certain novel serotypes being worked upon for the 1st time in the world for pneumococcal conjugate vaccine & human papillomavirus vaccine



Highlights

- 1 Strategic portfolio encompassing diagnostics, vaccines, and biotherapeutics for dreaded infectious diseases
- 2 Platform technologies that confers - affordability, safety, and efficacy
- 3 A certified 'Deep Tech Pioneer' by the Hello Tomorrow organization of Paris
- 4 20+ Institutional Biosafety Committee (IBSC) approvals for ongoing initiatives
- 5 15+ Research abstracts acceptance in global conferences of repute
- 6 15+ Patents filed
- 7 2 Publications in high impact factor journals of global repute
- 8 BIRAC's BIG Scheme-19 awardee
- 9 2021 SME Excellence awardee in healthcare by SME Chamber of India
- 10 Active contribution to the G20 presidency goal of One Health with its entire R&D portfolio based around the One Health approach to acquire the UN's Sustainable Development Goal 3



Memberships





The health of soil, plant, and man is one and indivisible.

– *Albert Howard*

TechInvention[®]

— towards greater health equity —

TechInvention Lifecare Private Limited
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Andheri East, Mumbai 400093, India.

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