



BLOCKCHAIN IN BIOTECH

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An Overview of Biotechnology and the Biotech Industry



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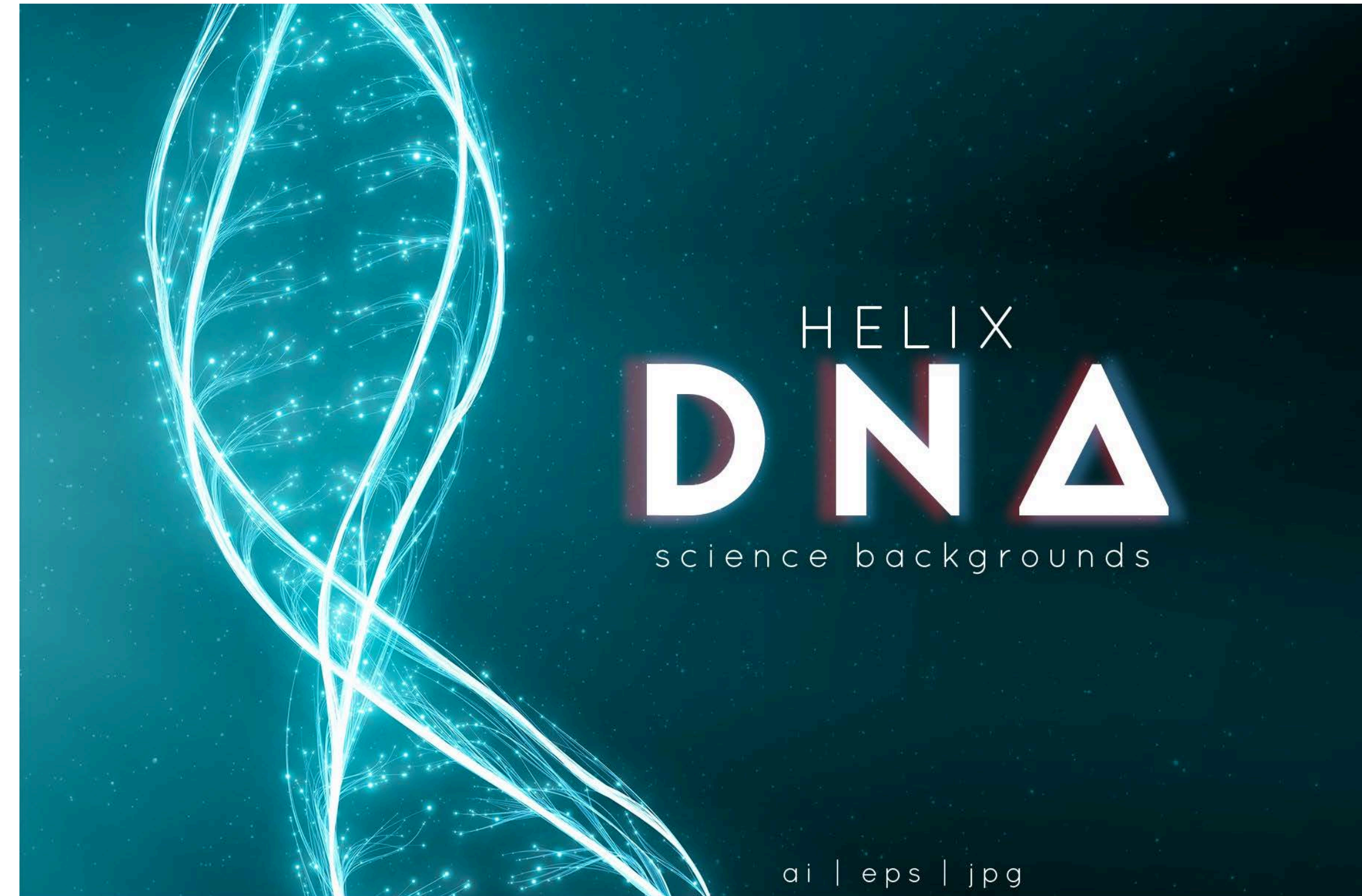
Biotechnology is an industry that is focused on the manipulation of living organisms to create commercial products



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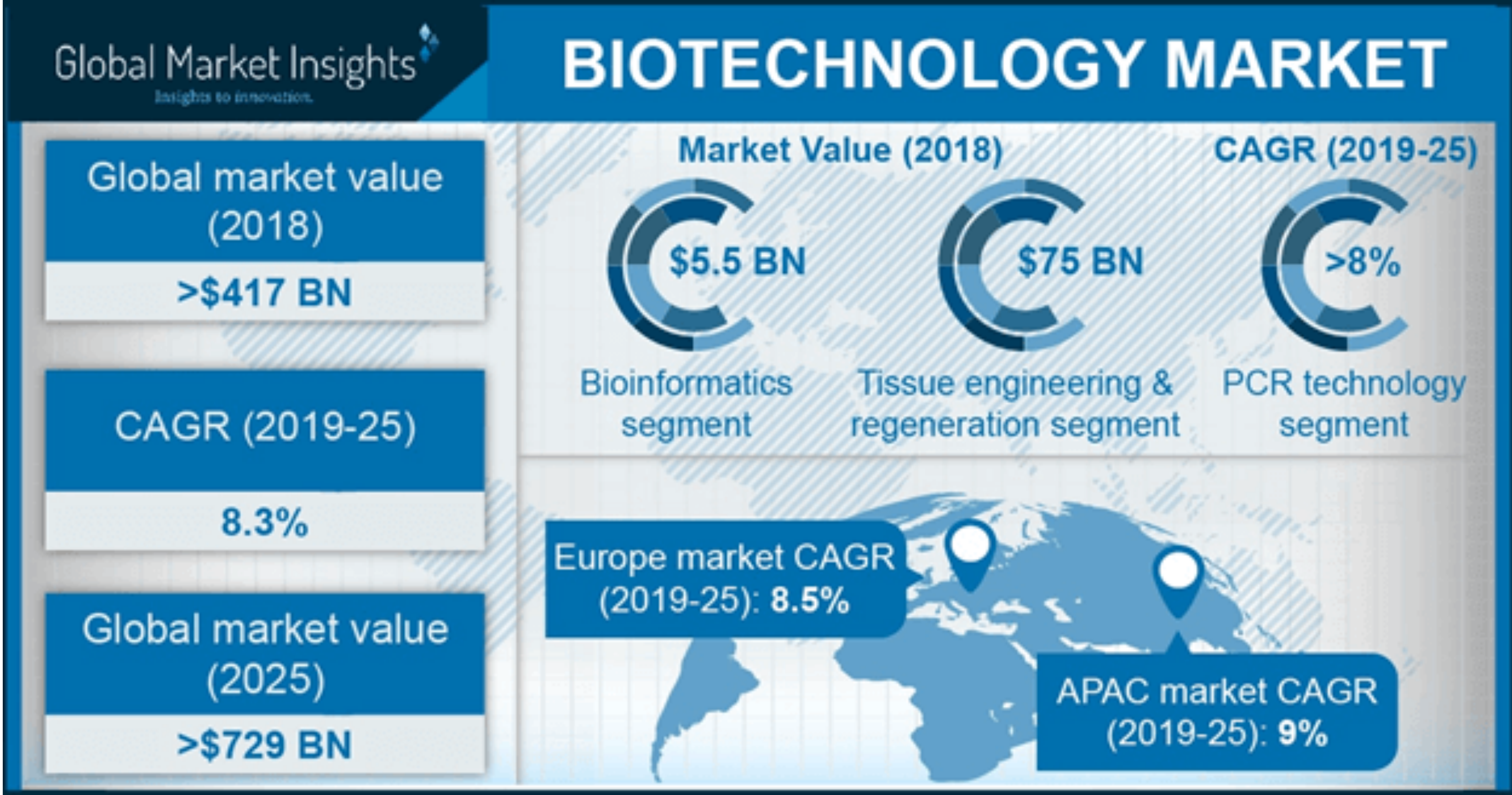


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The Biotech Markets: Medical and Agricultural



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The Biotech Revolution



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The Biotech Startup Revolution



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<h3>Biosensors</h3> <p>what Using biological components as sensors, biosensors can measure analytes such as organic compounds and bacteria with great precision.</p> <p>how</p> <ul style="list-style-type: none"> # biosensors measure a much wider spectrum of analytes than normal wearables # with advanced microelectronics, biosensors can deliver its data to physicians in real-time # greatly improve quantity and quality of medical data <p>watch out for: SENSIBLE MEDICAL</p>	<h3>Big Data</h3> <p>what With advancements in biosensors, gene sequencing and editing, BioTech generates an unprecedented amount of data. Big Data technology is crucial for making sense & creating values from this data.</p> <p>how</p> <ul style="list-style-type: none"> # generates a better understanding of basic biological mechanisms # recognizes large-scale patterns and makes predictions # accelerates data collection and analysis with lower costs in a variety of medical areas, including: genome and RNA sequence, gene expression, medical trial, and public health <p>watch out for: METABOLON</p>	<h3>Nanomedicine</h3> <p>what Uses nanotechnology, such as nanorobots, biological devices and machines to conduct precise medical treatment, microsurgeries, and deliver drugs.</p> <p>how</p> <ul style="list-style-type: none"> # nanorobots deliver small doses of drugs or treatment precisely to where they are needed # perform microsurgeries and repair damaged tissues in the brain and other hard-to-reach organs # provide ways of delivery for gene therapy and tissue engineering <p>watch out for: LIFNano</p>	
<h3>Mixed Reality (AR/VR)</h3> <p>what Projects detailed interactive 3D imagery/model in a virtual environment (VR) or in real world (AR). It simulates not only interactive holograms of human body and organs, but also their reaction to treatment in real-time.</p> <p>how</p> <ul style="list-style-type: none"> # close-to-reality simulation of organ function, circulation or treatment to inform patients and educate medical students # simulates surgery in AR/VR to improve training # improves accuracy and speed of surgent during operation by providing precise information, such as angles and positions of equipment <p>watch out for: SCOPIS</p>	<h2 style="font-size: 2em; margin: 0;">BioTech</h2> <p>600+ emerging startups analyzed 2020: global biotechnology market size reaches €513 billion</p>		<h3>Synthetic Biology & Metabolic Engineering</h3> <p>what Combines advanced disciplines of biology and engineering (such as genetic and metabolic engineering) to design and construct biological modules, systems or machines.</p> <p>how</p> <ul style="list-style-type: none"> # increases in the production of chemicals, fuels, and materials from renewable biomass # constructs new biological parts, devices & systems & the remodelling of natural biological systems # creates synthetic meat to reduce animal suffering and reduce greenhouse gas production <p>watch out for: Biosyntia</p>
<h3>Tissue Engineering</h3> <p>what Uses bioengineering and biochemical methods to improve and replace biological tissues.</p> <p>how</p> <ul style="list-style-type: none"> # regenerates or improves skin, bones and muscles # stem cells could be used to repair and replace damaged tissues and even organs # creates biosensor and tissue chips for detecting biological/chemical/toxic threat agents <p>watch out for: elanix biotechnologies</p>	<h3>3D Bioprinting</h3> <p>what Uses bioink material to create tissue-like structures layer-by-layer. Bioprinted tissues are useful both in research and regenerative medicine.</p> <p>how</p> <ul style="list-style-type: none"> # creates functional tissue to repair or replace in the human body # incorporates viable living cells # prints pills and drugs # utilizes 3D printed tissues and organs for surgical planning, biomedical research, and education purposes <p>watch out for: 3DS</p>	<h3>Gene Editing</h3> <p>what The discovery of CRISPR and subsequent gene editing advancement allows precise insertion, deletion and modification of specific DNA in the genome.</p> <p>how</p> <ul style="list-style-type: none"> # drastically reduces cost for genetic engineering # greatly enhances the availability and affordability of future gene therapy, disease prevention, and eventual human enhancement <p>watch out for: CRISPR THERAPEUTICS</p>	<h3>Artificial Intelligence (AI)</h3> <p>what The medical field generates a large amount of data both on research, diseases and treatment. AI helps with data analysis and to develop prognosis.</p> <p>how</p> <ul style="list-style-type: none"> # utilizes deep learning to discover new drugs and to detect anomalies in biosensor data # utilizes big data to recommend better treatment plans <p>watch out for: BenevolentAI</p> <p style="text-align: right; font-size: 0.8em;">powered by startus INSIGHTS</p>



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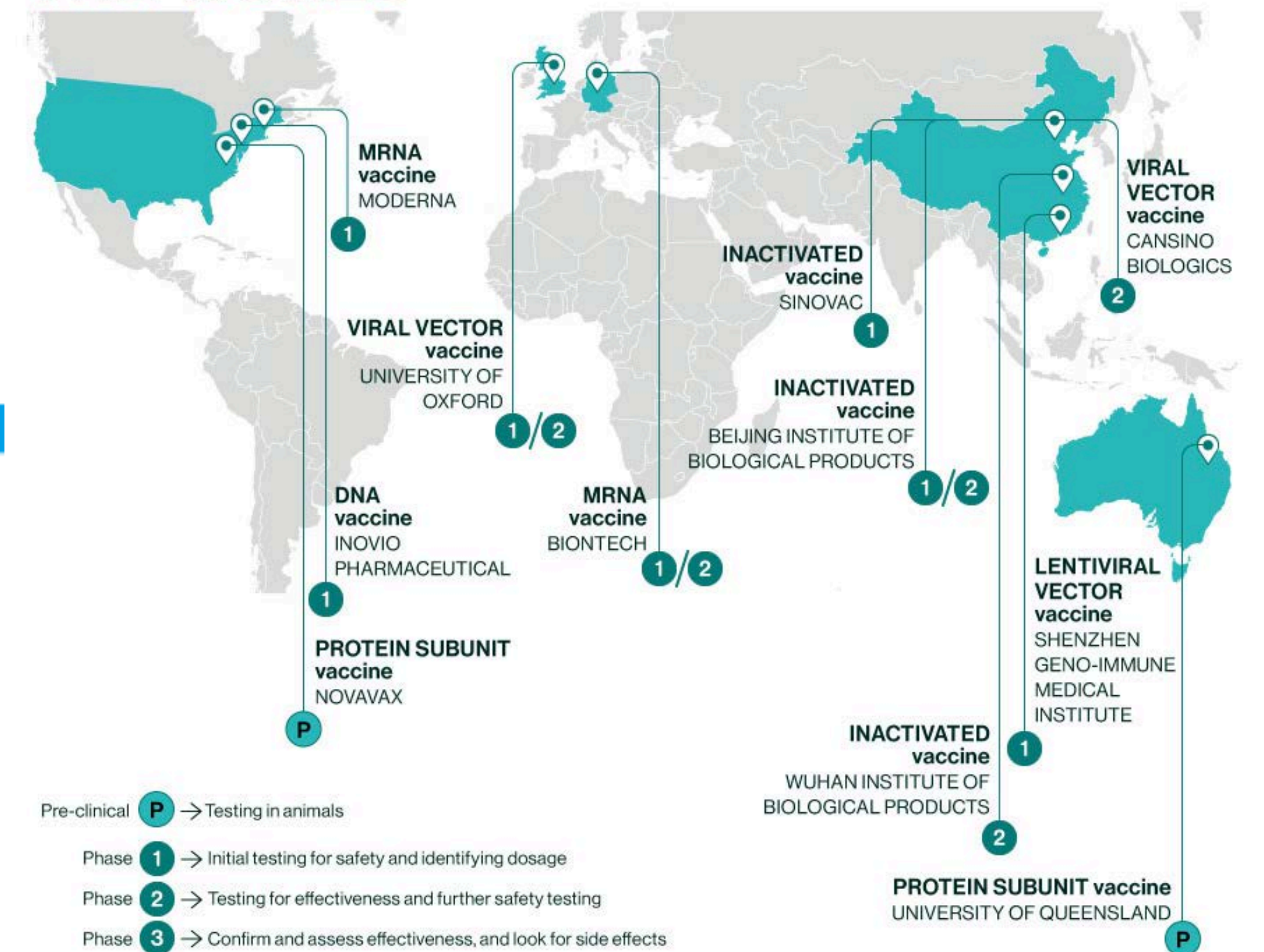
Designing New Drugs Faster



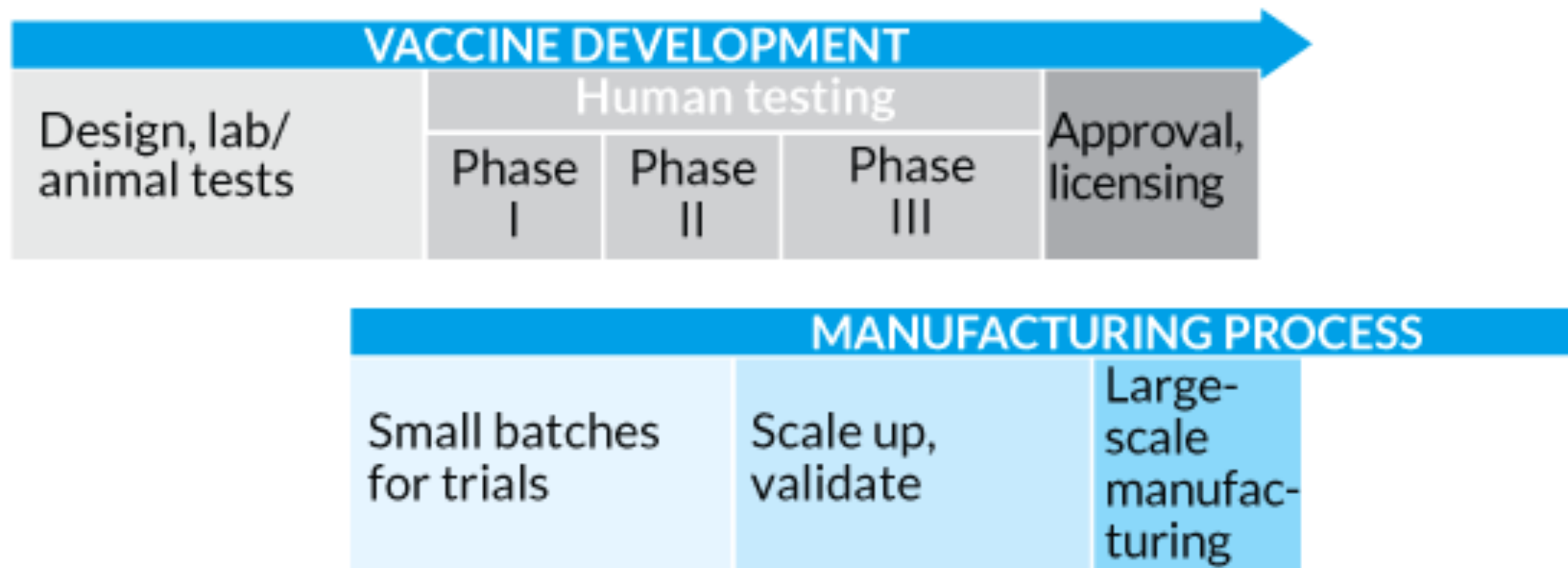
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COVID-19 VACCINES IN DEVELOPMENT AROUND THE WORLD



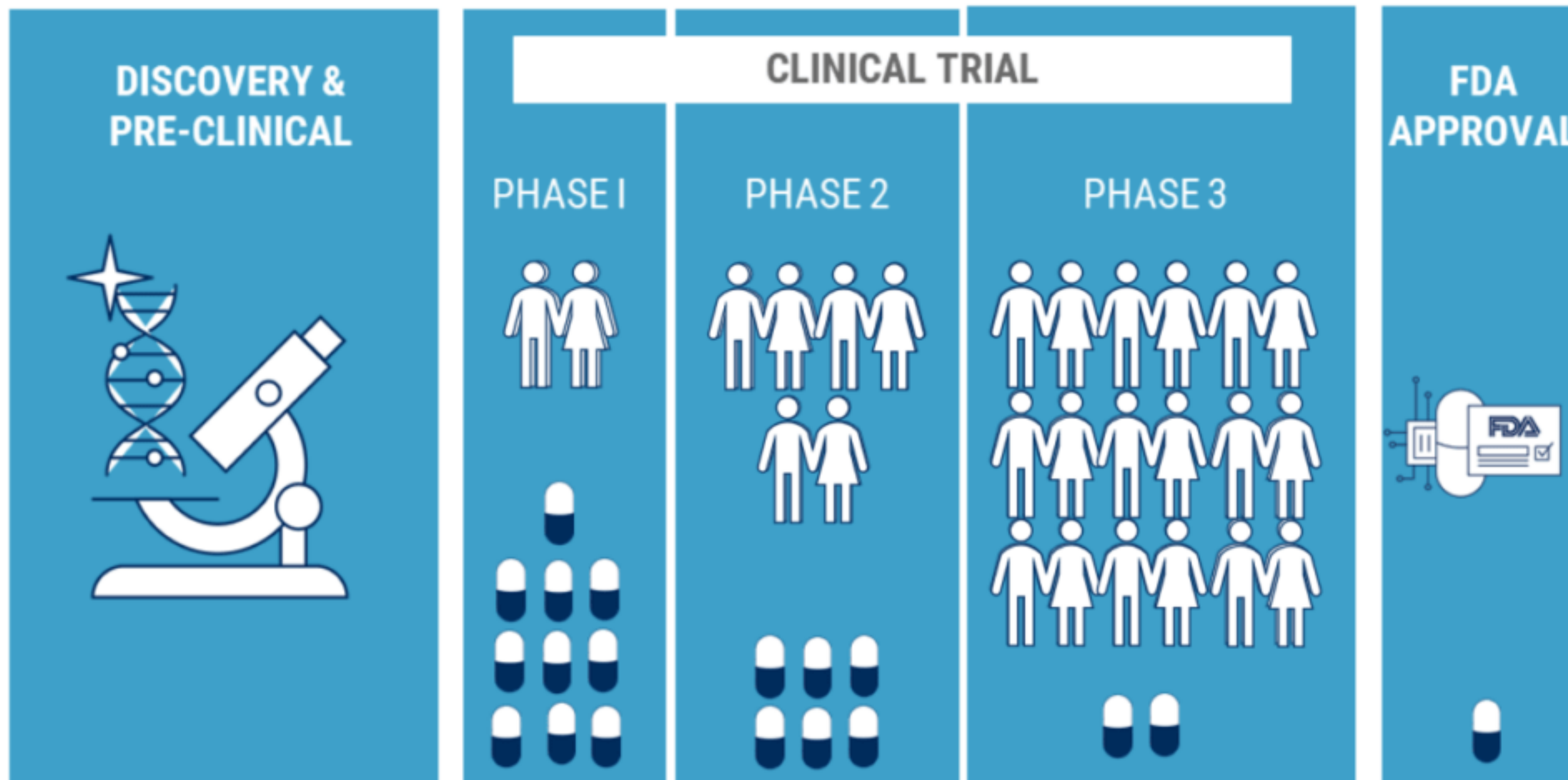
*Released on 11 May 2020



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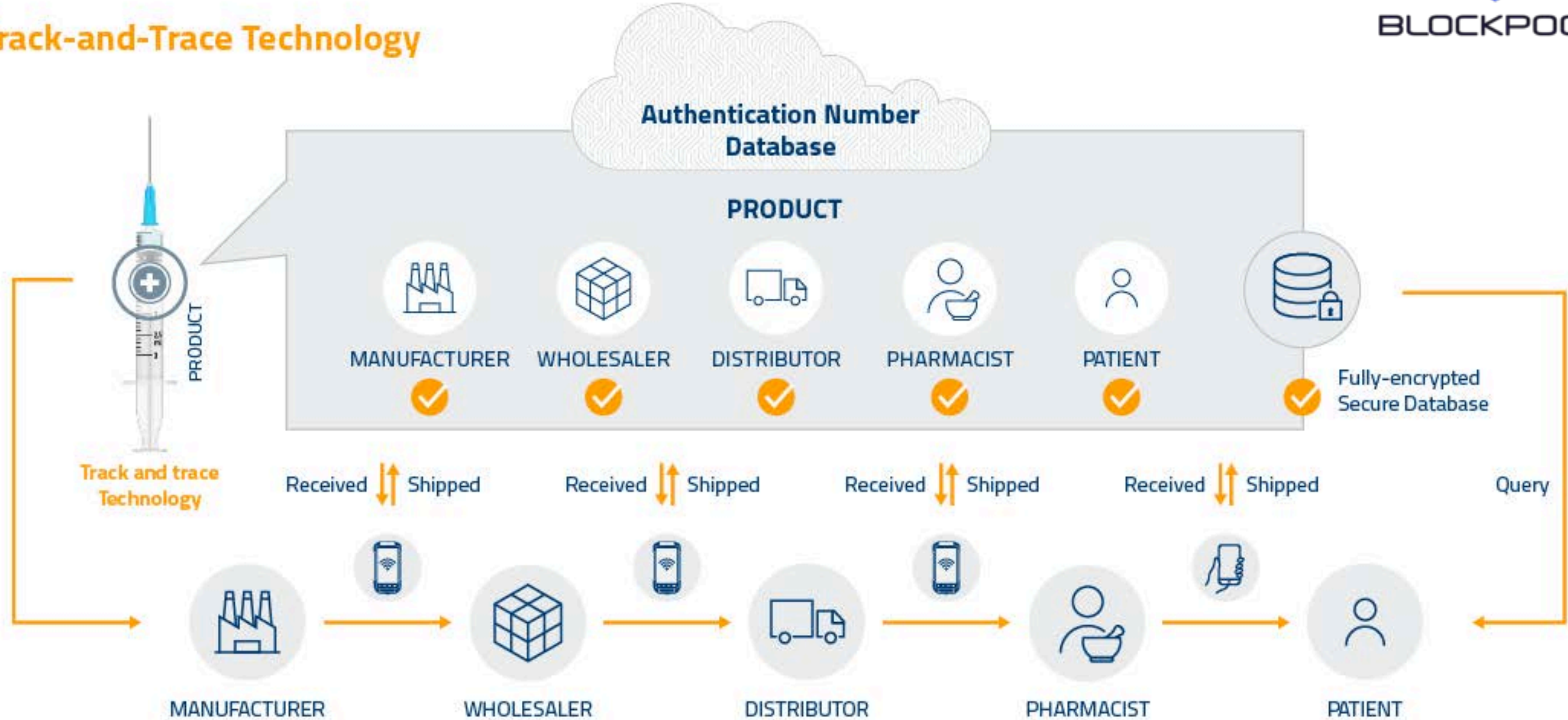


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Track-and-Trace Technology



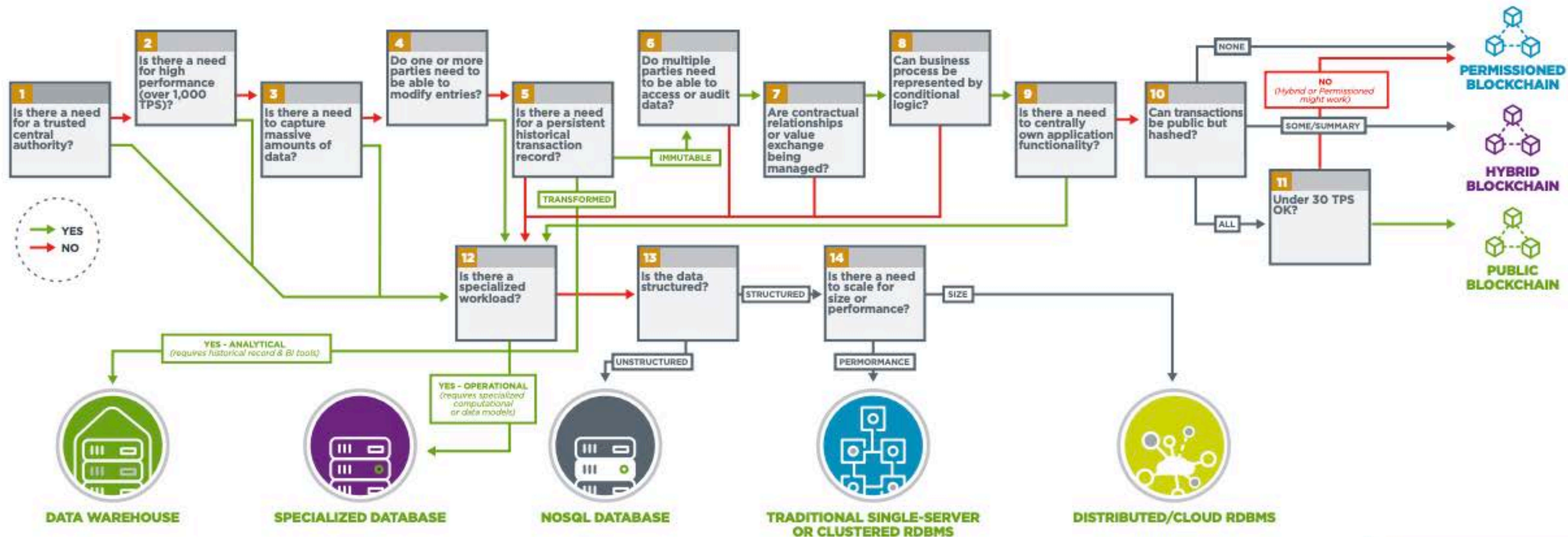
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Blockchain ?



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WHEN IS BLOCKCHAIN OR ANOTHER DATABASE THE RIGHT CHOICE?*

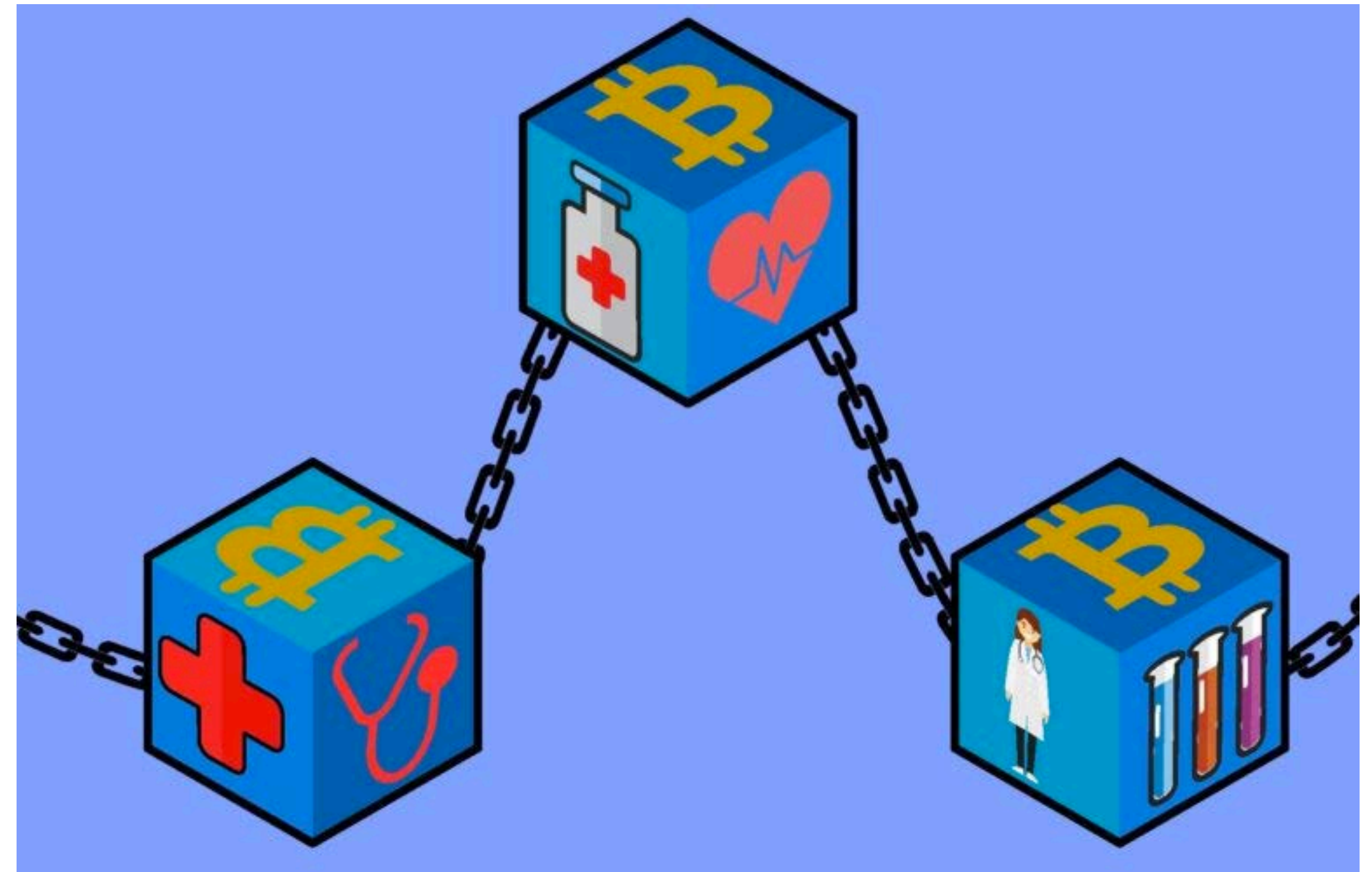


*Intended as a guideline to which database may best suit the business purpose. IT professional will need to evaluate full business requirements to finalize determination.



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Q&A



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