

HIBERNIUM
BIOTECH

Vision

Enabling trust in Biotech supply chain through Blockchain and IoT

Mission

Guarantee a correct state of preservation and quality of biotech material during their shipment
from production to the final costumer

The Problem

Biotechnology research uses many products very sensitive to rises in temperature.

Professionals who use these valuable and expensive products know that their quality, effectiveness and safety depends on the temperature conditions.

20%

Of temperature sensitive products are damaged during transport due to a broken cold chain

Cargosense

Pain Points

Lack of documentation and traceability
Inadequate Packaging
Issues with Product Quality
Interrupted Temperature Control

\$14 B

The amount spent each year on the transport and storage of refrigerated or frozen products in the pharma sector

DHL

The Solution

Hibernium is a service designed to monitor the temperature of thermosensitive products using three technologies: IoT, Blockchain and Smart Contract

IoT Sensors



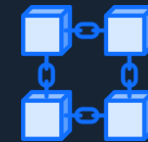
IoT sensor records the parameters

Smart Contracts



These data are used to compile
Smart Contracts

Blockchain



Smart Contracts and transaction
data will be entered and maintained
in the blockchain

Hibernium is a solution that guarantees the impossibility of altering the data by all the participants of the chain, thanks to the impartiality and transparency of the blockchain.

Why Biotech Market?

Global Market Value (2018-2025)

Market CAGR (19-25)

Europe
8,5%

APAC
9%

From 417 B\$
to 729 B\$

Data from: Global Market Insights report on Biotech Market, 2018

Top 10 Biopharma 2000-2020



Data from: J.Lamark Advisor in Biotechnology

Biotechnology Main Areas & applications



Industry & Environment

- Water and Air purification
- Disposal of toxic waste
- Bio Energy (Ethanol, Methane, Biodiesel)
- Biomaterial (Bioplastic)



Agriculture

- Free chemicals agent (bio pesticide, natural fertilizer)
- Decrease world hunger (OGM, In Vitro Meat)



Healthcare

- Improve Life quality
- Improve Pharma Sector
- Improve Diagnostic sector
- Improve Regenerative Medicine

The pharma world **has moved from chemicals to biology**

Key Elements

Parameters Control



Location
Temperature
Humidity
Shock

Active Monitoring



Real Time Monitoring
Compliance Requirements
Preventive corrections
KPI & SLA

Ecosystem Advantages

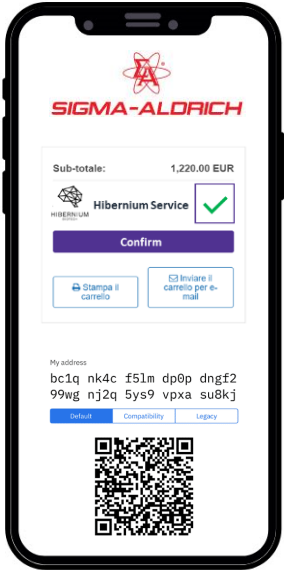


Quality & Safety
Trust & Transparency
Sustainability

UX Process – Positive Scenario

1

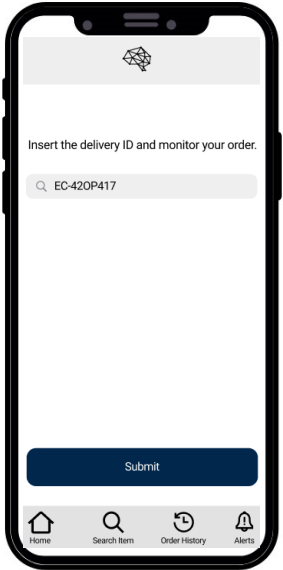
Product order



- The final customer orders the product on the Wholesale seller's website and chooses the Hibernium option;
- The customer inserts the address of his Wallet, on which he will receive the possible refund;
- The customer receives an ID and a QR Code associated with the shipment.

2

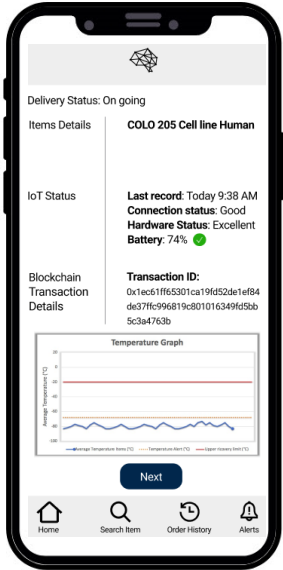
Application access



- The User enters the ID on the Hibernium App and displays in real time the condition of the ordered product

3

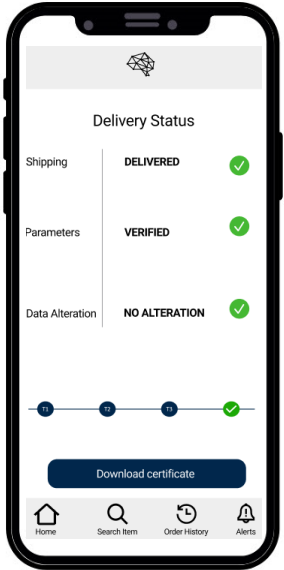
Tracking & Controlling Dashboard



- The User receives periodic reports with details of the parameters of the product ordered;
- The User can view a dashboard page containing:
 - Detail of the shipment
 - Graphs on the temperature of your product
 - IoT battery status
 - Detail of trx recorded on blockchain

4a

Shipment closing

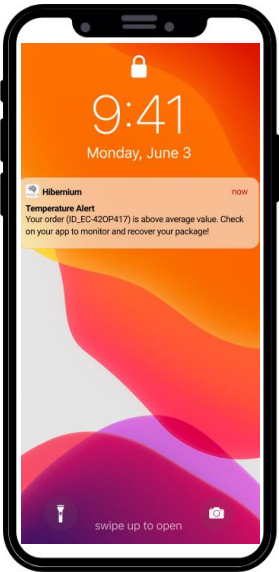
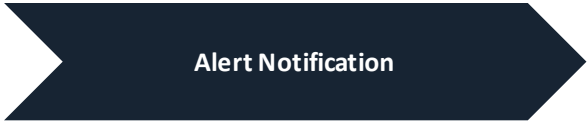


- In the positive scenario, at the end of the shipment, the customer can check the status of the delivery and verify its success;
- The customer scans the QR code and chooses the option "End Delivery";
- From this point on, the smart Contract stops to exist, and the Transporter takes back the IoT sensor.

UX Process – Negative Scenario

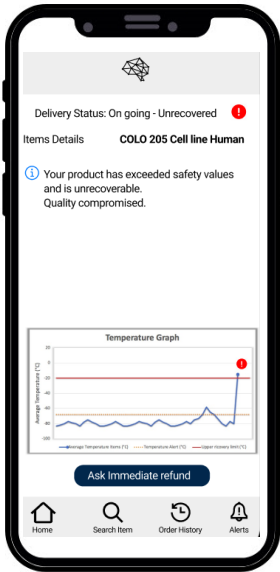
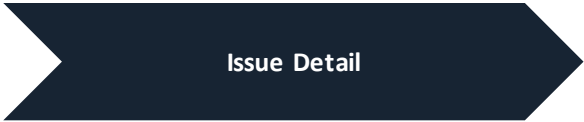


4b



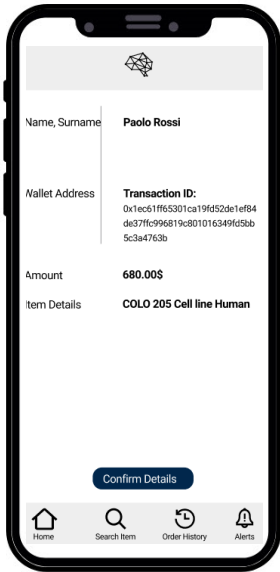
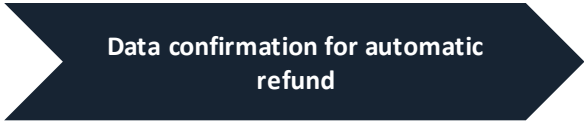
- In case of temperature alteration, the User receives an alert from the application through Push notification

5b



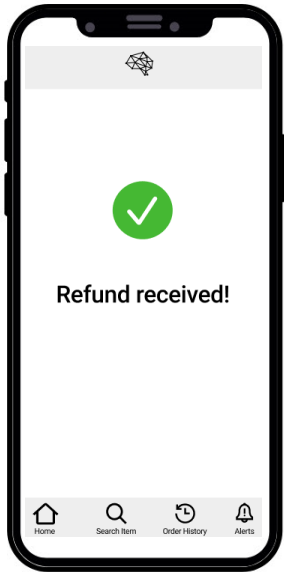
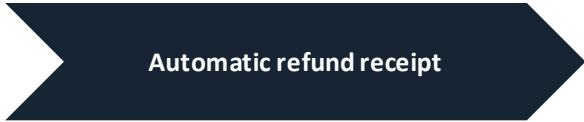
- The user opens the app and verifies the details of the issue;
- If the Transporter acts promptly and the right temperature is re-established within the time limit, the shipment ends as in the Positive scenario.

6b



- In case of critical issues that cannot be solved, the User receives in real time the details of the automatic refund that will take place directly on his Wallet at the address indicated at the beginning of the process.

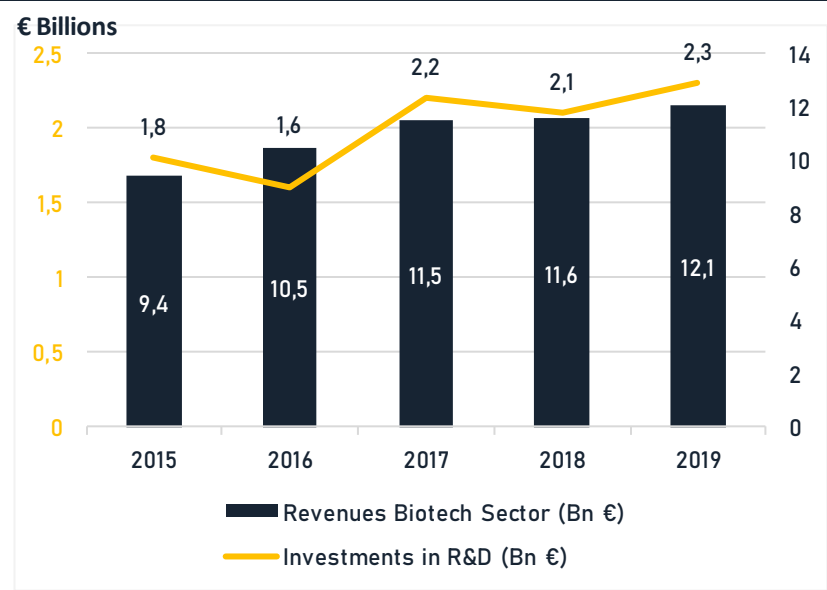
7b



- The User receives in real time the amount paid in the initial phase for the product

Biotech Market Analysis – Italy

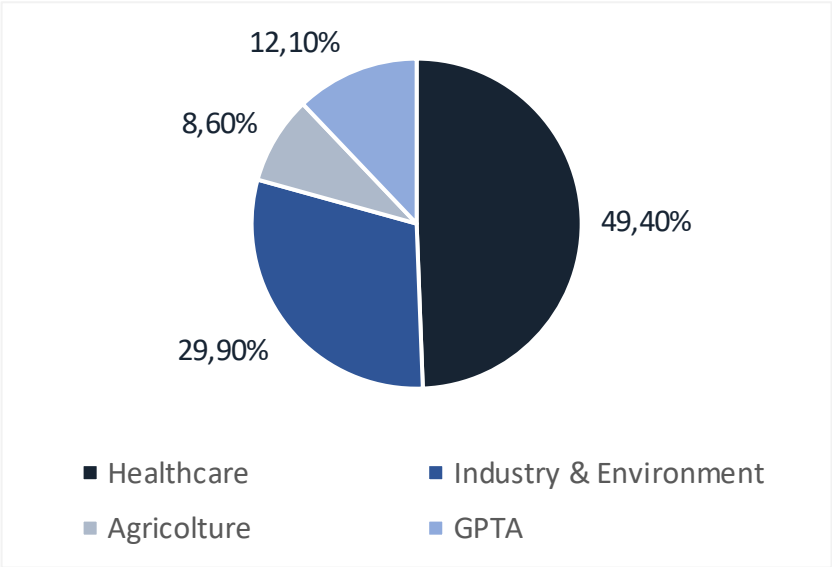
Italian Biotech Sector: Revenues and Investments in R&S



Revenues grow from € 9.4 billions in 2015 to € 12.1 billions in 2019 and Investments from € 1.8 billions to € 2.3 billions

Le imprese di biotecnologie in Italia – Facts&Figures” - Assobiotech

Biotech Revenues Analysis



49.4 % of Biotech Revenues come from the Healthcare & Pharma Sector

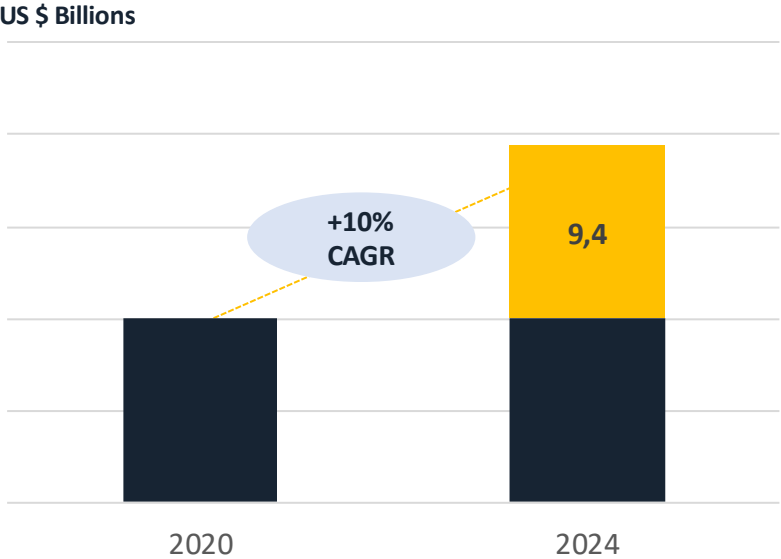
Le imprese di biotecnologie in Italia – Facts&Figures” - Assobiotech

Italian Biotech Sector Data 2019

- Total Biotech Revenues: 12,1 Bn €
- Revenues growth 2015 - 2019: + 29%
- Total R&D Investments: 2,27 Bn €
- R&D Investments growth 2014 - 2019: + 25%

Cold chain Pharma Market Analysis – Global (1/2)

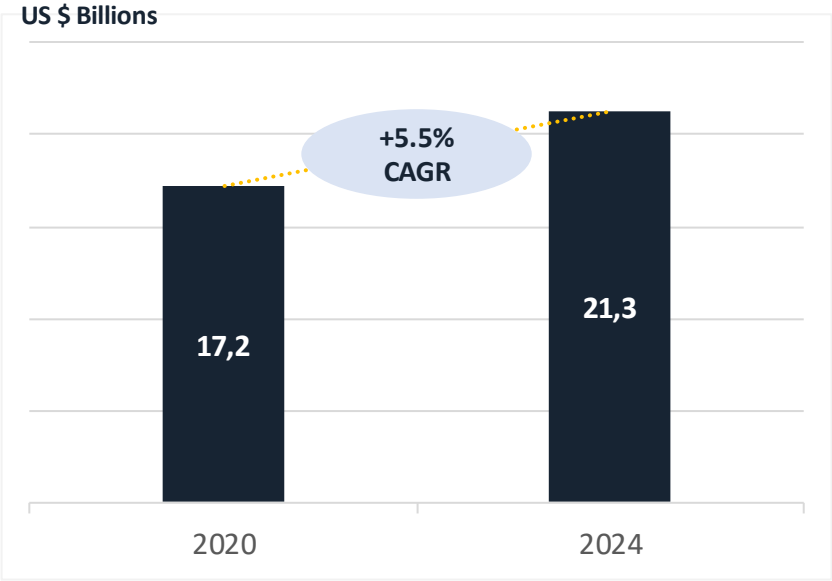
Global Cold Chain Logistics Market for Biopharma Industry 2020-2024



The market grows by USD 9.48 billion during 2020-2024 at a CAGR of more than 10%

<https://www.bloomberg.com/press-releases/2020-01-24/global-cold-chain-logistics-market-for-pharmaceuticals-industry-2020-2024-evolving-opportunities-with-agility-public>

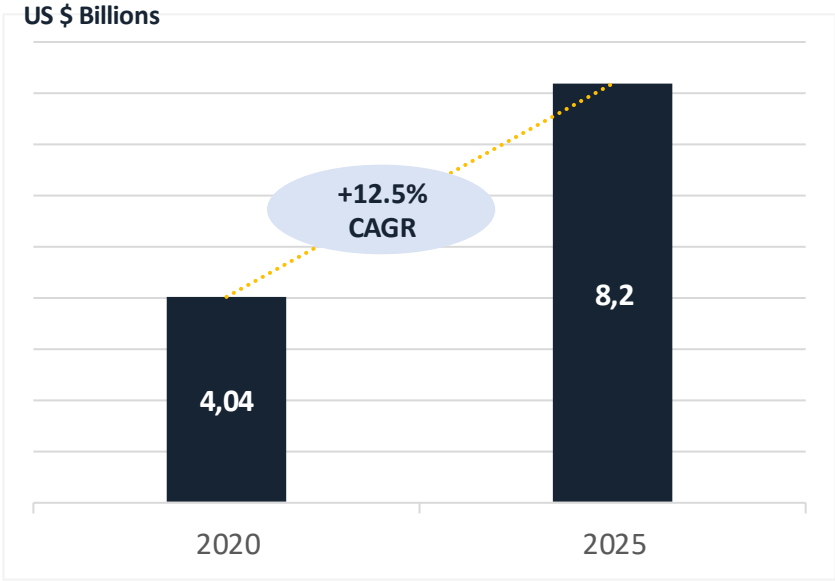
Global Biopharma Cold chain services market (packaging, transportation and data services)



From USD 17.2 billion in 2020 to USD 21.3 billion by 2024 at a CAGR of 5.5% from 2020 to 2024

11th edition of the Biopharma Cold Chain Sourcebook - Pharmaceutical Commerce.

Global cold chain monitoring market

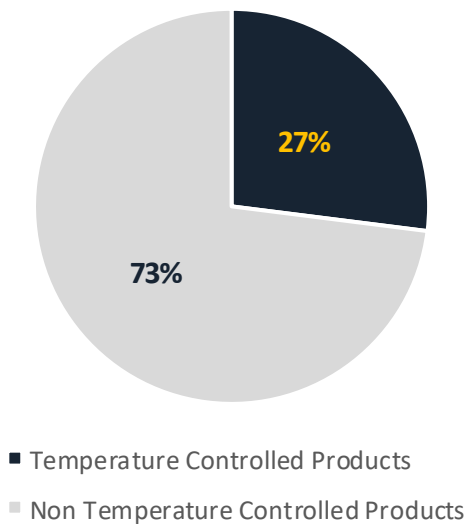


It is expected to reach USD 8.2 billion by 2025 at a CAGR of 12.5% from 2020 to 2025

<https://www.globenewswire.com/news-release/2020/06/10/2046414/0/en/The-global-cold-chain-monitoring-market-size-is-likely-to-exhibit-significant-growth-in-the-coming-years-it-is-expected-to-reach-USD-8-2-billion-by-2025-at-a-CAGR-of-12-5-from-2020.html>

Cold chain Pharma Market Analysis – Global (2/2)

Global Biopharma Products

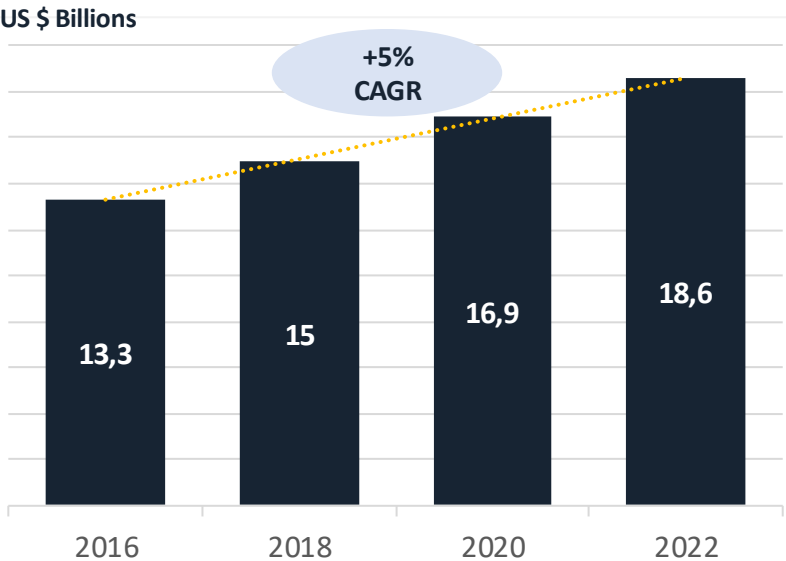


27% of overall biopharma products in 2019 were Temperature Controlled Products

2019 Biopharma Cold-Chain Logistics Survey



Global Biopharma Cold chain Spending

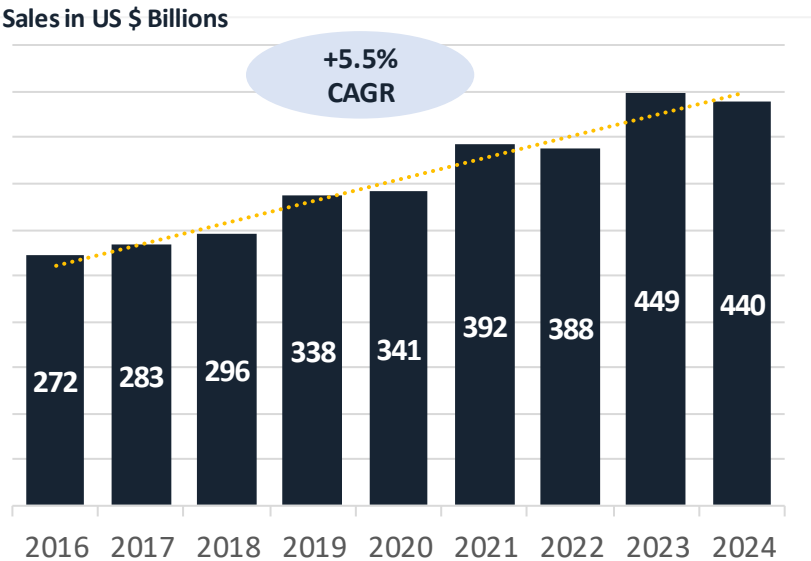


There is a constant increase in spending for cold-chain logistics in the pharma industry

<https://blog.locus.sh/biopharmaceutical-cold-chain-logistics-challenges-and-opportunities/>



Global biopharma cold chain products sales from 2016 to 2024



It is expected to reach USD 440 billion by 2024 at a CAGR of 5.5% from 2016 to 2024

<https://www.statista.com/statistics/303081/trend-in-biopharma-cold-chain-products-global-sales/>



Unique Positioning in the Market



Competitive Advantages

Technology	<ul style="list-style-type: none">BlockchainIoTSmart Contracts
UX	<ul style="list-style-type: none">Fully transparent process from AppRefund in real time
Sectors Knowledge	<ul style="list-style-type: none">Blockchain business enterpriseBiotechnology practical laboratories experience
Process digitalization	<ul style="list-style-type: none">E2E Fully Digital Process

Revenue Model

	Total Revenues		
%	<div>25%</div>	<div>25%</div>	<div>50%</div>
Company	Wholesale Seller	Transporter	Hibernium
Advantages	<ul style="list-style-type: none">• More information to support legal issues (disclaimer);• Data analysis optimizations;• Fast and streamlined refund operations;• Increased automation and transparency;• Higher revenues without additional costs;• Image advantages (innovative company status, customer loyalty, customer experience);	<ul style="list-style-type: none">• Operational risk reduction (SLA/KPI)• Higher revenues without additional costs;• Image advantages (innovative company status, customer loyalty, customer experience);	<ul style="list-style-type: none">• Integration with transport company and wholesale seller systems already used on the market;• Reaching a loyal customer target;• Development of a collaborative and cooperative environment that brings benefits to all participants in the value chain.

Team

Core Team

Advisors



Andrea Giacoia
CEO & Co-Founder



Ludovico Dragoni
MD & Co-Founder



Federico Leggiero
CFO



Cristina Colosi
Technical Advisor



Massimo di Gregorio
Business Advisor



Master's Degree
Business
Management



Master's Degree
Medical
Biotechnology



Master's Degree
Business
Management



Master's Degree Bio
Engineering



Global Head of Market
Development for
Emerging Markets
Reuters



**“What would stop you from
moving forward?”**