



BioSynaptica S.A.

Targeting Neurodegeneration with Engineered Erythropoietin

Verticals

Biotechnology
Human Health

Contact

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Team

Milagros Bürgi
Co-founder- CSO
Matías Depetris
Co-founder - CEO
Marcos Oggero Eberhardt
Co-founder - Researcher
Ricardo Kratje
Co-founder - Researcher

Previous funding

USD 124,000 - Founders
USD 100,000 - Aceleradora Litoral
USD 200,000 - FONDCE - BICE

Required investment

USD 2 M

Operations

Manufacturing Process Development
Analytical Development

Proof-of-Concept in Animal Models

Preclinical Initiation

Institutions linked to IP

UNL
CONICET
UNSAM

Strategic alliances

Aceleradora Litoral
Biotechnological Center of Litoral (FBCB-UNL)
Max-Planck-Institut für Multidisziplinäre Naturwissenschaften (Germany)
ICIVET (UNL)
ITERA – Inteligencia Tecnológica. Parque Tecnológico del Litoral Centro (PTLC, Santa Fe).
IPMont (Uruguay)
CAB Startup (Argentina)

Advisors

Thomas Ryll
Marcelo Grabois
José Luna Pinto

BioSynaptica is a biotech startup pioneering the development of innovative biotherapeutics derived from human erythropoietin (hEPO) for the treatment of neurodegenerative disorders, with a focus on retinal diseases.

Retinopathies: A Major Global Cause of Blindness

Neovascular retinopathies are a leading cause of blindness and visual impairment, affecting over 300 million people worldwide. The most prevalent forms include diabetic retinopathy (DR) and age-related macular degeneration (AMD). Current treatments, such as Vabysmo™, Lucentis™, and Eylea™, primarily target neovascularization but fail to address the underlying neurodegenerative and inflammatory components of the disease.

A Novel hEPO-Derived Molecule for Retinal Disease Treatment

Human erythropoietin (hEPO) is a biotherapeutic used to treat anemia due to its ability to stimulate red blood cell production (erythropoiesis). In addition, hEPO exhibits neuroprotective and neuroplastic activities: it protects neurons from neurotoxic damage, reduces neuroinflammation, and promotes neuronal connections.

However, when used as a neurodrug in non-anemic patients, hEPO can cause side effects related to its erythropoietic activity. BioSynaptica has developed a new hEPO molecule that blocks the erythropoietic activity (undesirable effect) while preserving its neuroprotective and neuroplastic capabilities, as demonstrated in *in vitro* and *in vivo* studies.

In preclinical models, our candidates demonstrated multiple benefits:

DR Model: Protection of retinal neurons from damage and apoptosis, and reduction of pathological neovascularization.

Wet AMD Model: Significant attenuation of inflammation, inhibition of gliosis, and prevention of abnormal neovascular growth.

Our novel hEPO molecules are protected by patents in the USA, Europe, Japan, Israel, and Russia, with exclusivity extending until 2039. Additionally, we have active patent applications in other key markets, covering approximately 60% of the global market.

Market Overview

The neurodegenerative disease therapeutics market is projected to reach USD 60 billion by 2025, growing at a CAGR of 7.14% (2025-2030). Retinopathies represent a USD 20 billion market, with an estimated CAGR of 6.4% (2024-2030). Current treatments are dominated by anti-VEGF therapies, which generate billions in revenue annually but fail to address the neurodegenerative component. The target market segment for BioSynaptica's business consists of biotechnology and/or pharmaceutical companies that can incorporate an innovative biotherapeutic for the treatment of retinopathies into their product portfolio..

B2B Licensing and Royalty Model

BioSynaptica will conduct investment rounds to carry out proof-of-concept studies in animal models of specific pathologies, starting with retinal disorders, and then conduct the corresponding preclinical trials. Once these objectives are achieved, the technology will be sublicensed to one or more pharmaceutical companies for clinical trials up to, eventually, the introduction of the drug to the market, charging upfront payments, milestone payments, and royalties on net sales. This model will be replicated to cover other neurodegenerative diseases that can be treated with our technology.