



NEUWAY Pharma – Qualified for CNS Drug Delivery

NEUWAY Pharma GmbH, Bonn, Germany is focusing on the preclinical and clinical development of innovative therapeutics for treatment of brain diseases based on its proprietary CNS Drug Delivery Platform. This platform is based on a protein that naturally forms capsules, named Engineered Protein Capsules (EPCs). EPCs may be used carrier to transport highly active drug substances - ranging from small molecules to large nucleic acid strands – across the blood-brain barrier (BBB).

NEUWAY uses this technology to encapsulate active drug substances that do not cross the BBB to successfully treat severe orphan brain diseases with very high medical need. NEUWAY plans to partner its CNS drug delivery platform with pharmaceutical or biotech companies preferably if large indications, like Alzheimer's disease, are addressed.

The company is backed with venture capital from renowned investors and a strong board.

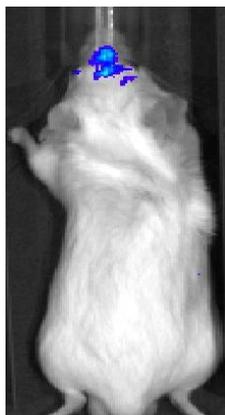
The **blood-brain barrier (BBB)** is an epithelium layer surrounding cranial blood vessels. This layer controls the transport to and from the central nervous system (CNS) and protects our brain from toxins and pathogens. Unfortunately, many drugs are regarded as toxins by the BBB and are prevented to pass the BBB and exert its activity in the brain. This is why many drug candidates for CNS diseases fail in development.

An **efficient CNS delivery system** for drugs naturally excluded from the CNS by the BBB would allow to revive the therapeutic potential of drug candidates that got stuck in the development pipeline. NEUWAY focuses on the exploitation of its CNS drug delivery platform that can be used to facilitate the transport of active drug substances of different origins into the CNS.

Preclinical Proof-of-Concept was demonstrated using a large molecule that was successfully transported across the BBB into cells of the mouse CNS: a plasmid encoding for Firefly Luciferase, packed into NEUWAY's engineered protein capsules, expressed the protein in brain cells and made the animals brain emit light (Fig. 1).



Fig. 1: Plasmid i.v. (tail vein)



Plasmid-EPCs i.v. (tail vein)

NEUWAY's CNS drug delivery platform is based on a capsule (EPC) that allows easy filling of the lumen (Fig. 2) with drugs. The capsule consists of one protein that occurs naturally and is biotechnologically manufactured by NEUWAY.

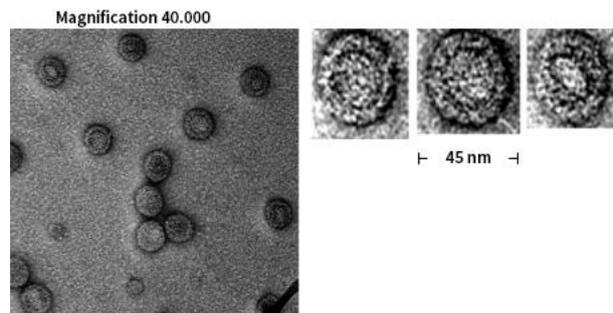


Fig. 2 Electron microscopy picture of intact biotechnologically produced EPCs, which can be filled with drugs.

As EPCs can carry large nucleic acid strands, they may be useful for, e.g., **gene therapy of rare CNS diseases**.

NEUWAY's proprietary CNS drug delivery platform has the great potential to serve as a vehicle for active drug substances of different origins to pass the blood brain barrier.

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