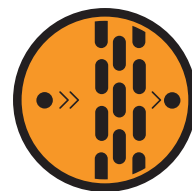


LipoBridge®

Facilitate transport of drugs across the blood brain barrier



LipoBridge is an innovative technology specifically designed to facilitate transport of drug compounds across the blood brain barrier (BBB) and into the central nervous system (CNS).

What does LipoBridge do?

- LipoBridge temporarily and reversibly opens tight junctions to deliver drug compounds into the CNS, avoiding the potential side effects of traditional CNS delivery technologies.
- Over 100 model compounds from small molecules (100 Daltons) to proteins and antibodies (155,000 Daltons) have been delivered across the BBB using LipoBridge.

The challenge of CNS therapies

- The BBB naturally limits most molecules from entering the CNS, especially those greater than 600 Daltons. Due to this limitation, many potentially important drug compounds are discarded during the R&D process.
- The incidence of CNS disease rises as the average lifespan increases.
- The failure rate for CNS drug development is much higher than for other therapeutic areas.
- The biotechnology revolution is creating many drug compounds that cannot enter the CNS.

Properties

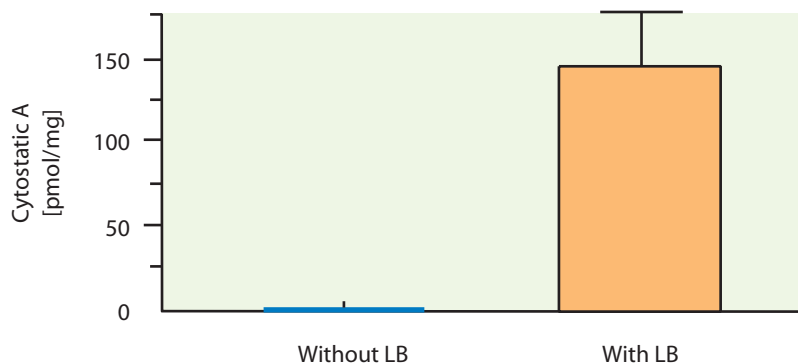
- **STRUCTURE:** Forms a clear suspension of nanoparticles in water.
- **SOLUBILITY:** Solubilizes or stabilizes some drug compounds.

Formulation

- **FORMULATION:** In a typical parenteral application, 70mM of LipoBridge is mixed with the desired amount of drug compound in an aqueous buffer to form a liquid dosage form.
- **STABILITY:** Data supports that formulations with LipoBridge are stable at 25°C for 12 months and 40°C for 3 months, provided the drug compound is stable.
- **ADMINISTRATION:** To date, drug compounds have been delivered via the intra-arterial, intravenous and oral routes of administration.
- **DATA:** Both in-vivo and in-vitro data are available which demonstrate absorption enhancement and efficacy.

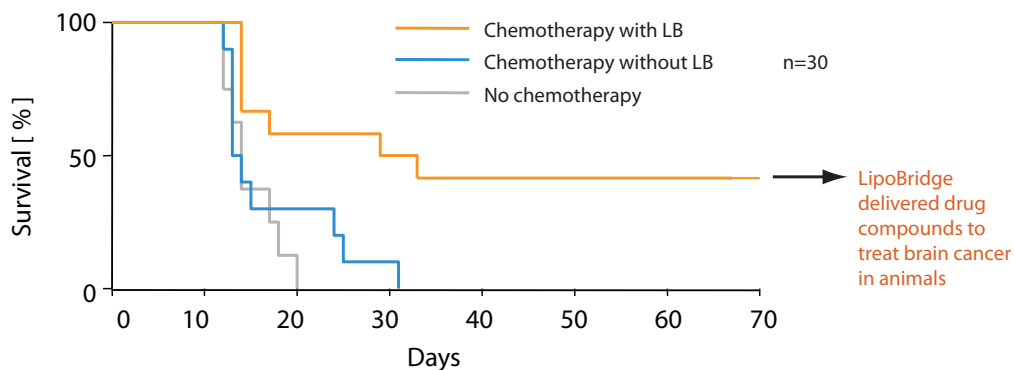
Proof of Use Absorption Enhancement Data

Concentration of Cytostatic A delivered into the brain tissue of normal rats without and with LipoBridge (LB)





Proof of Use Efficacy Data



LipoBridge is at an advanced stage of pre-clinical development with formal safety studies underway.

Patents & Access

- LipoBridge is broadly patent protected for both composition of matter and application in drug delivery.
- Genzyme Pharmaceuticals supports the patenting of novel combinations of LipoBridge with specific drug compounds.
- Genzyme Pharmaceuticals presents the technology under a Confidential Disclosure Agreement permitting review for your particular application. Your research team can then design evaluations of your drug compounds together with Genzyme.
- After signature of a Technology Evaluation Agreement, the technology is transferred to your research team for evaluation in your own models, keeping the structures of your drug compounds and data confidential.
- When you identify a suitable application, the technology may then be licensed on an exclusive worldwide basis. Genzyme will supply the LipoBridge compound and expertise to support the drug development timetable.

Company Overview

- One of the world's foremost biotechnology companies, Genzyme is a leader in developing and applying the most advanced technologies in the life sciences to address a broad range of unmet medical needs.
- Genzyme Pharmaceuticals, a business unit of Genzyme Corporation, develops and manufactures drug delivery technologies and pharmaceutical materials focusing on specialty phospholipids, peptides, and amino acid derivatives.
- Genzyme Pharmaceuticals offers the following drug delivery technologies:
 - LipoBridge® - facilitate transport of drugs across the blood brain barrier
 - LipoMask™ - increase the circulation time of lipid particles in blood

Customer Service

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