

Altogen
Labs

Provider of Preclinical Research Services (GLP/non-GLP) for Drug Discovery
Efficacy and Pharm/Tox IND contract research studies (clients worldwide)
100+ Xenograft Models (validated in-house) and IND-enabling Toxicology studies
100% IP belongs to client, experienced IACUC-regulated barrier facility

Blood Brain Barrier Model Development

Contact us: info@altogenlabs.com | Read more at AltogenLabs.com
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

What is the brain blood barrier?

- The brain blood barrier, or the "BBB", is a border of capillary endothelial cells that protects the brain by blocking toxic substances in the blood from entering the brain's interstitial fluid.
- It performs many other important functions as well, such as preserving a homeostatic environment for central nervous system (CNS) structures to properly function.

BBB Permeability

- The brain blood barrier is an essential structural and chemical barrier that is effective in protecting the brain and the CNS.
- However, this makes it difficult to successfully introduce drugs into the CNS, especially in the drug development process.



Isolation of Rat Brain Astrocytes

- Another method to test compounds for BBB permeability is to isolate the rat brain microvessel endothelial cell. This is essential for successful delivery of agents to the brain. An 'astrocyte' is a cell type that is abundant in the brain and cell culture systems allow for closer study.
- Studying astrocytes has been a large component of our understanding of the nervous system. Pure astrocytes can be obtained through isolation and culture.

Procedure Summary

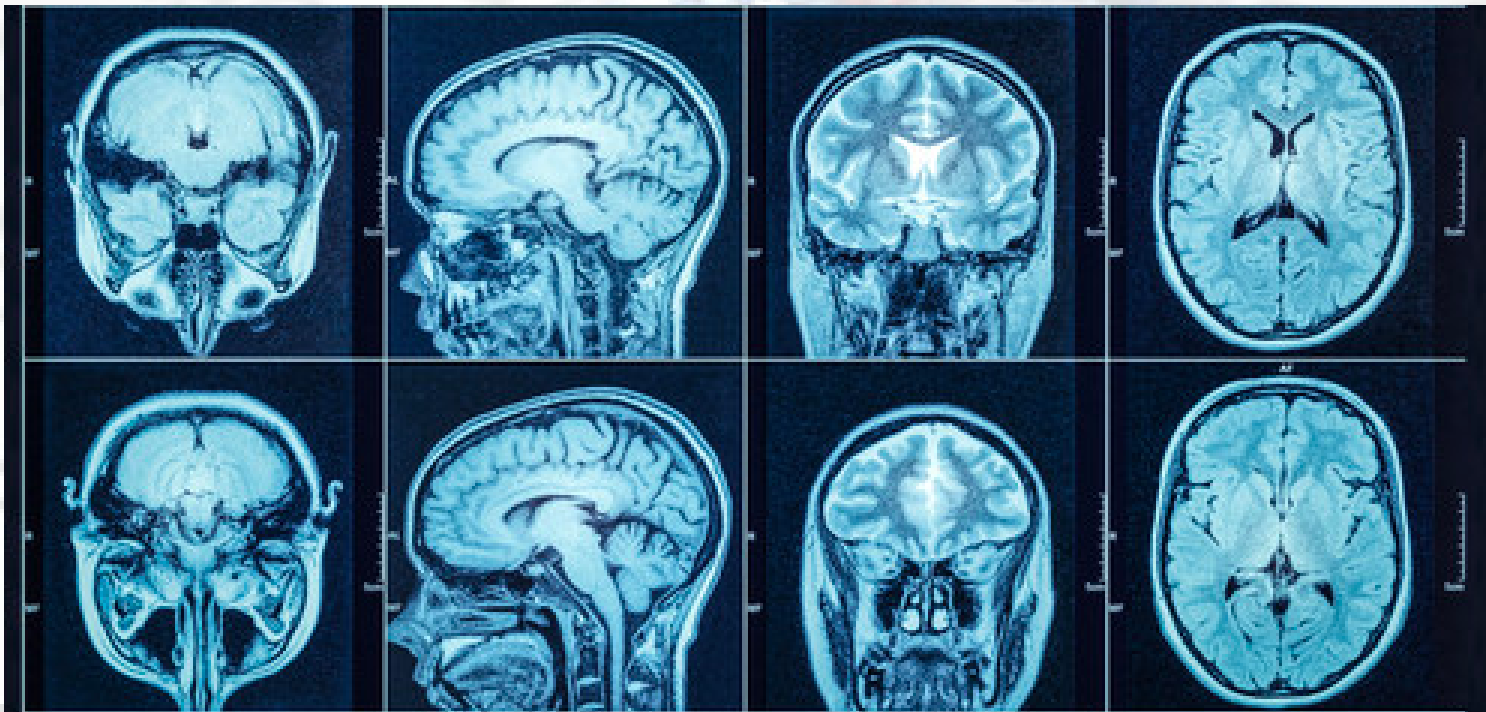
- Rat brain isolation is done when pups are 1-2 days of age.
- Brain is moved into dissection solution and cortical rinds are collected.
- They are then put into Trypsin solution and incubated.
- This solution is replaced with inhibitor solution and incubated once more.
- Moved to centrifuge and spun.
- Culture solution added and suspension is filtered.
- Placed in culture flasks at specified environmental conditions.
- After 8 days (typically) water bath is introduced.
- Cultured until confluence.
- Washed, then added with 10% FBS.
- Cell suspension, then placed into seed cells.

Crossing the BBB

- Altogen Biosystems announced that its Nanoparticle-based In Vivo Transfection Reagent was used for the effective overcoming of the blood-brain barrier and the successful transfection of glioblastoma tumor cells with both plasmid DNA and siRNA molecules.
- Altogen Labs' research study demonstrated functional cargo delivery of both siRNA and DNA (3.72Kb) through the blood-brain barrier, as well as high transfection efficiency and reproducibility.

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Overcoming the Brain Blood Barrier

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- Altogen Labs is a preclinical CRO that provides many preclinical studies and has established functional delivery of siRNA and DNA through the blood brain barrier.
- Our laboratory is properly equipped and our staff are trained to perform any study under Good Laboratory Practices (GLP).



Contact us to discuss details, timeline estimates, and price!

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