



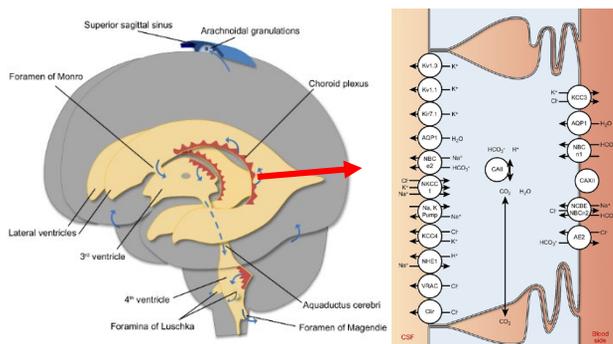
Cerebrospinal fluid and hydrocephalus

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Background

Cerebrospinal fluid (CSF) is mainly produced by the choroid plexus localized in the brain ventricles. The choroid plexus epithelial cells express a range of membrane transporters that are involved in the secretion of CSF. Pharmacological or genetic inhibition of these transporters is a potential tool for lowering CSF secretion in disorders with increased volume of CSF.



Damkier HH, Brown PD, Praetorius J. *Physiol Rev.* 2011

CSF accumulation in the brain ventricles, **hydrocephalus**, can be caused by inhibited drainage into the venous system, an obstruction of the flow in the ventricular-subarachnoid pathway, or by increased CSF secretion.

We are interested in studying the mechanisms involved in the production of CSF and answering the questions:

- Is it possible to inhibit excessive CSF production and hence, hydrocephalus?
- Is it possible to target membrane transporters in the choroid plexus to inhibit CSF secretion?

Projects and techniques

Projects for Bachelor and Master students as well as medical students interested in applying for a research year are available.

The projects will be adapted to the students own interests.

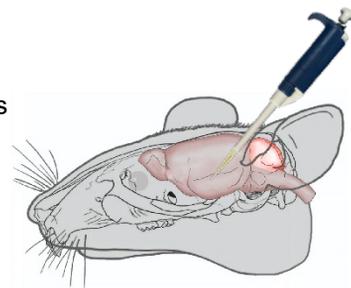
The research group is part of the Membranes theme at the Department of Biomedicine and is also part of a larger laboratory community that share a common interest in membrane transporters involved in water and solute transport across the cell membrane.

Projects could include:

- Investigation of membrane associated transport mechanisms in the choroid plexus during pathological and healthy conditions.
- Investigation of the expression of membrane transporters in the choroid plexus in an animal model of subarachnoid hemorrhage.

Techniques applied:

A wide range of methods and assays are utilized in our laboratory facilities including different mouse models, intracerebroventricular drug delivery, microsurgery, qPCR, immunoblotting, microscopy, cell cultures of choroid plexus epithelial cells and more.



Group members:

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