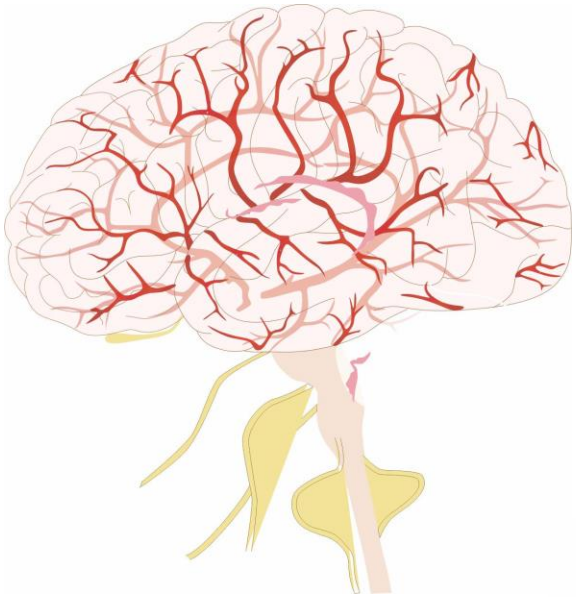
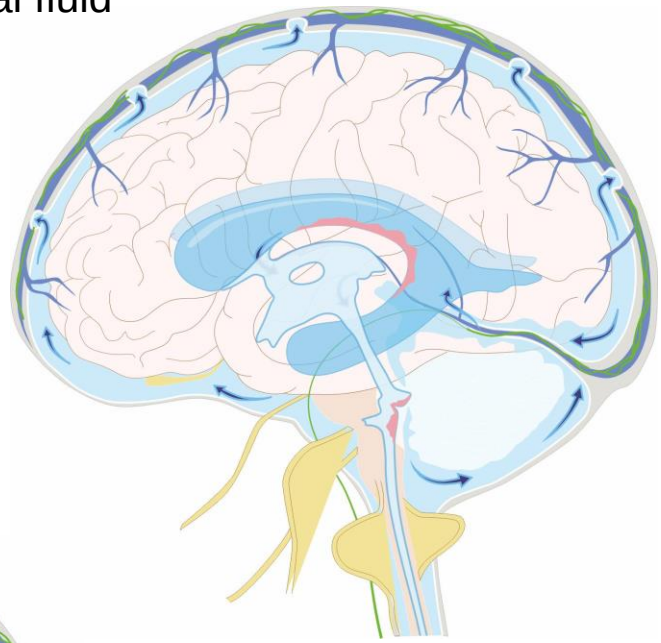
The brain-body long-range volume transmission: Ependymoglia regulate cerebrospinal fluid flow to the peripheral organs

Central nervous system: Fluids and barriers

Brain vasculature



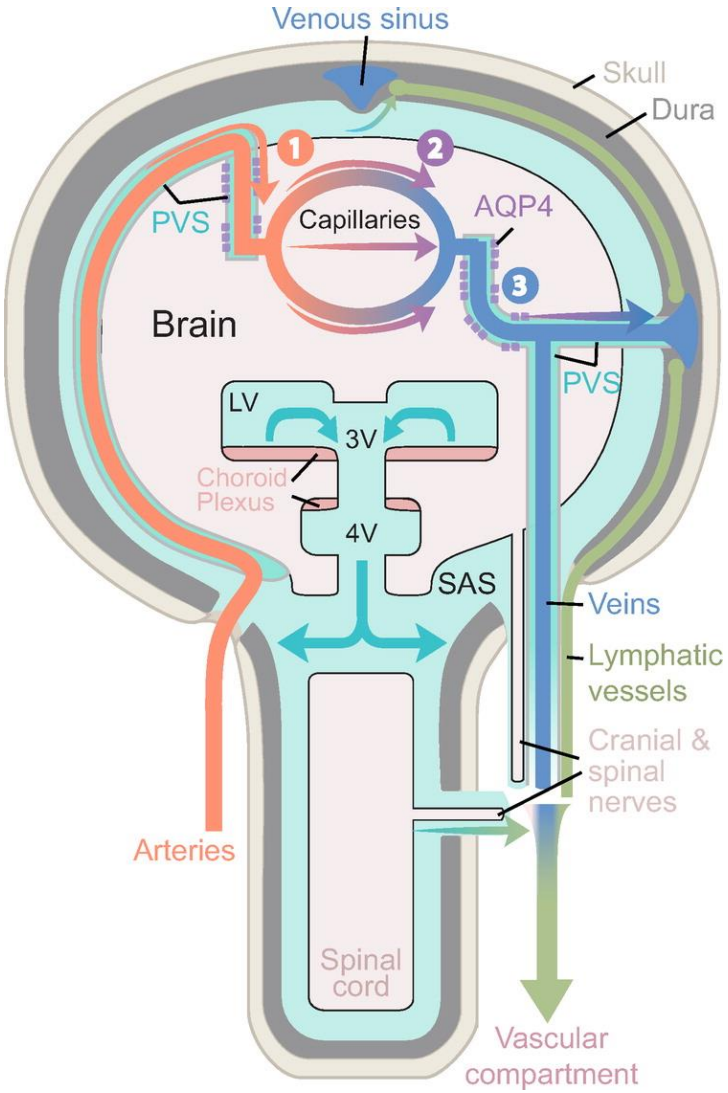
Cerebrospinal fluid



Brain networks

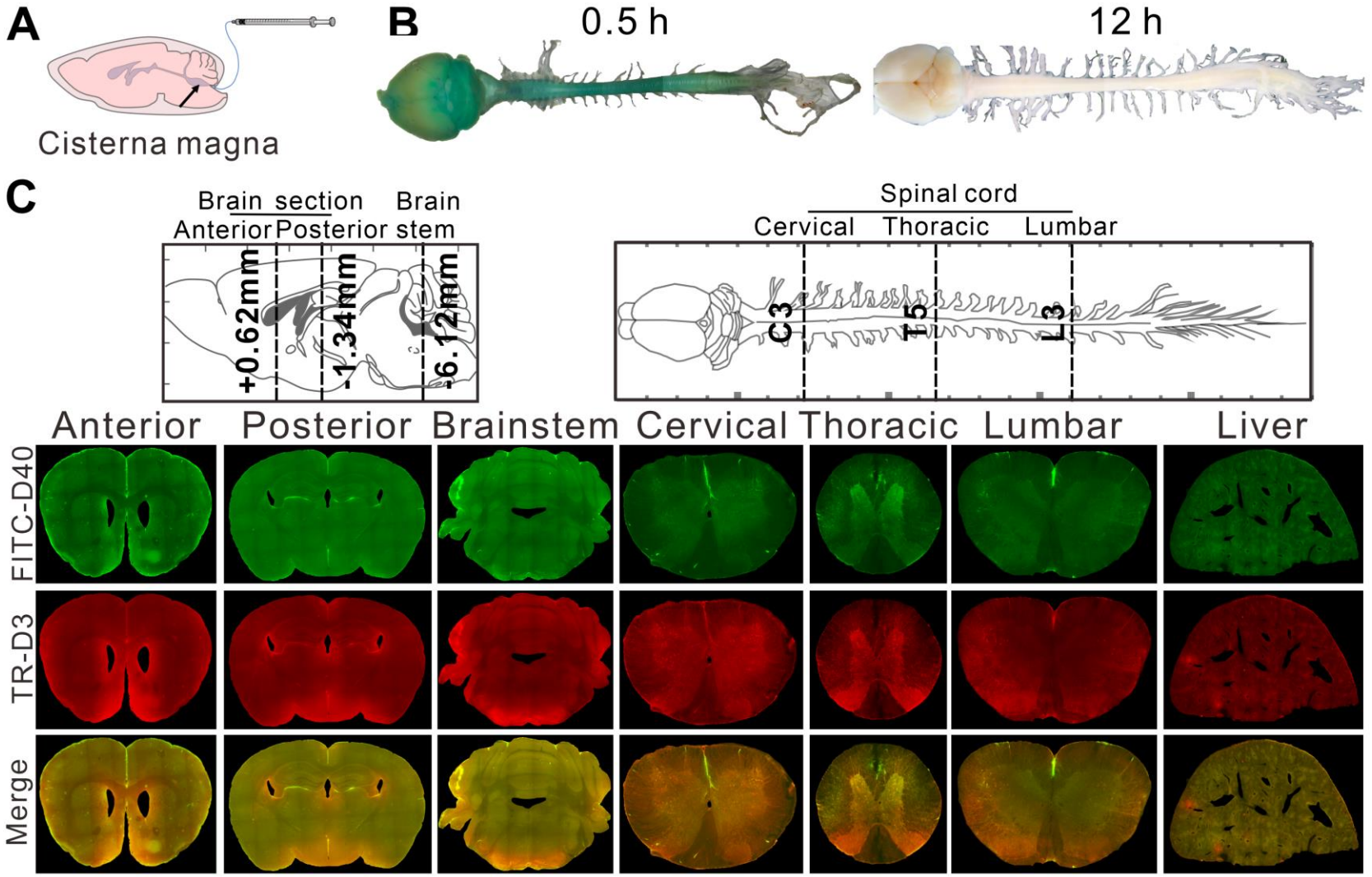
The drainage of the cerebrospinal fluid

How the large amount of CSF is drained to keep the stability of intracranial pressure is incompletely understood. Classically, the CSF is known to leave the fourth ventricle at three locations, the foramina of Magendie (median aperture) and Luschka (lateral apertures) to drain into the subarachnoid space. Alternatively, a fraction of the CSF travels along the central canal of the spinal cord or along subarachnoid space of the latter. The drainage through peripheral nerves was suggested but never studies in detail.



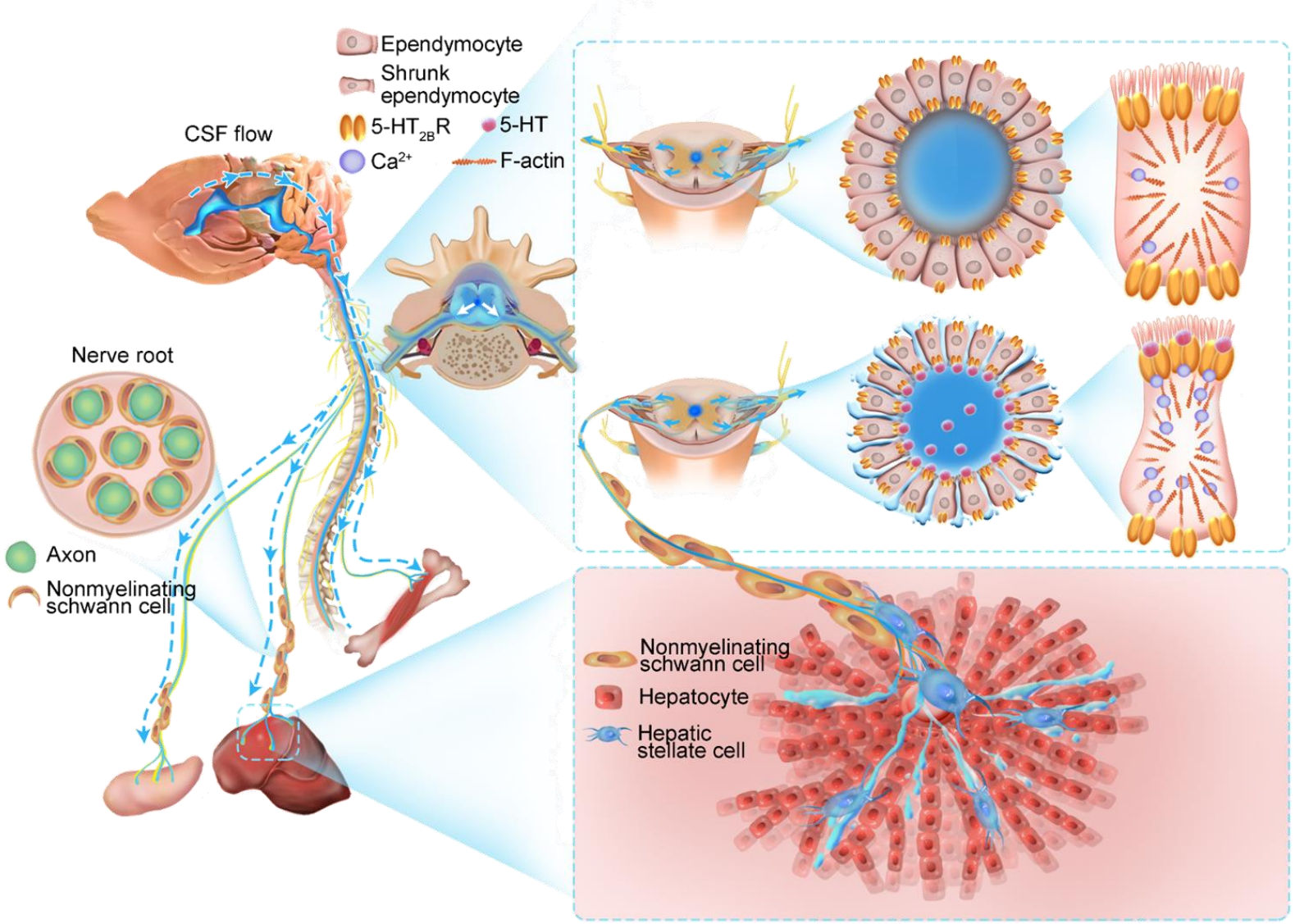
Rasmussen, Mestre & Nedergaard (2022): Physiol. Rev. **102**, 1025-1151.

Fluorescent tracers (3 or 40 kDa) reach the liver after injection into Cisterna Magna



Li, … A. Verkhratsky, Xia & Li (2024): *PNAS*, **121**, e2400024121.

Ependymoglial gate regulates CSF flow to the periphery



Li, … A. Verkhratsky, Xia & Li (2024): *PNAS*, **121**, e2400024121.