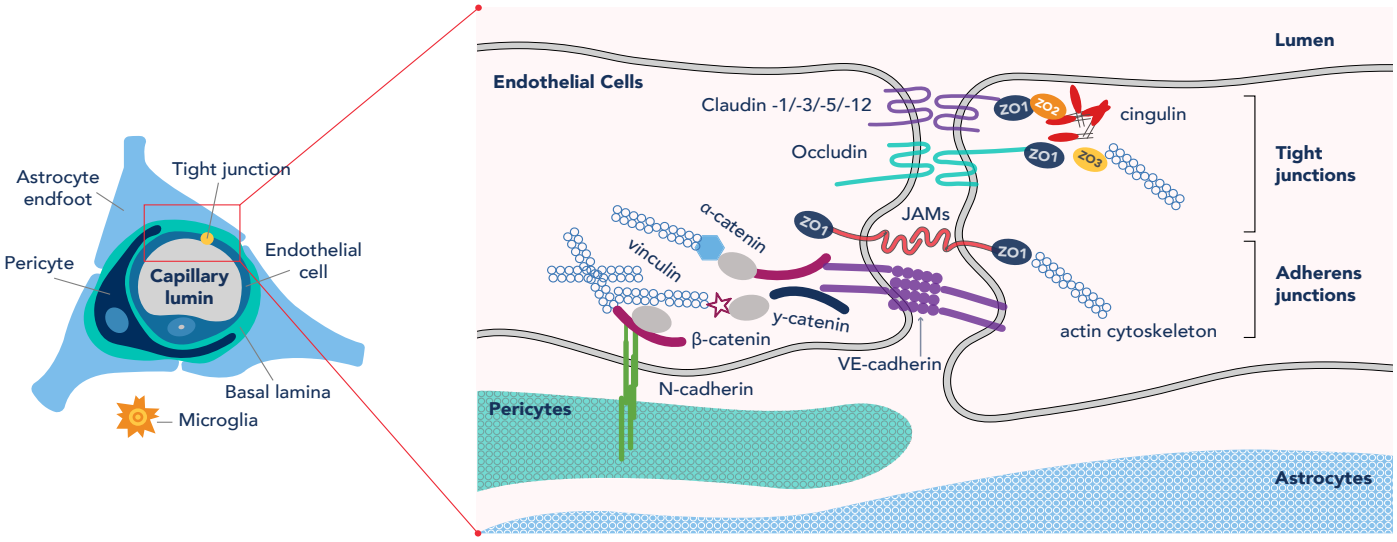
Blood-brain barrier research

- **The main barrier for CNS protection** and helps maintain ionic homeostasis and brain nutrition.
- **Huge obstacle in delivering drugs** or other treatment strategies to the brain.
- **BBB dysfunction** is central to the pathology of diseases such as MS, epilepsy and stroke.



Infographic of the structure and associated molecules of the neurovascular unit of the BBB. Image redrawn from Kadry et al., 2022 (PMID:33208141)

The BBB is primarily made up of vascular endothelial cells with special characteristics:

- **Tight junctions**
- **Absence of fenestrations**
- **Active transport mechanisms**

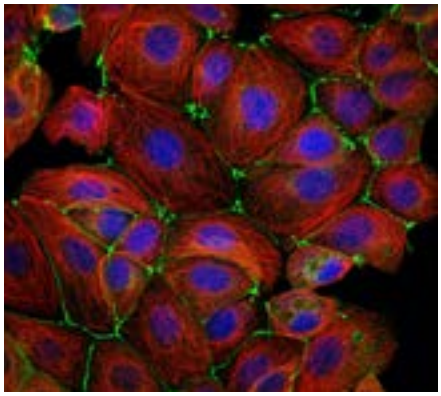
Pericytes share a basement membrane with the endothelium. Astrocytes extend their processes as endfeet as a direct interface between the vasculature and glia.

proteintech®

Antibodies for BBB research

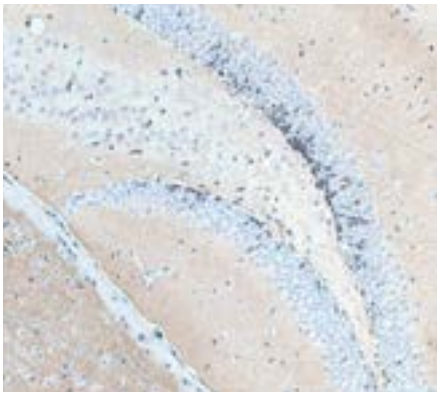
Upgrade your BBB research with our top cited and expert KD/KO validated antibodies.

Occludin



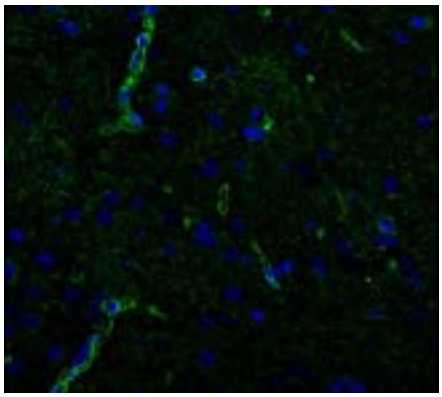
IF staining of MCF-7 cells with Occludin recombinant antibody 80545-1-RR (green), Alpha-tubulin 66031-1-Ig (red).

N-Cadherin



IHC staining of mouse brain tissue with N-cadherin monoclonal antibody 66219-1-Ig.

Aquaporin



IF analysis of rat brain with aquaporin 4 polyclonal antibody 16473-1-AP (green).

Tight junctions

- **ZO-1*** ,-2*,-3**
- **Claudin-1***/-2**
- **Occludin***
- JAM-1

Adherens Junction

- **N-Cadherin***
- VE-cadherin
- **Vinculin***
- α-/ γ-/ **β-Catenin***

Transporters

- **GLUT1***
- MRP1*
- **P-Glycoprotein/MDR1****
- **BCRP****
- **Aquaporin-4****
- Kir4.1

Key: Citations: *= >10, **= >50, ***= >100 | **BOLD** = KD/KO validaited