

Blood capillaries, function, management

Basic Information

Capillaries

Greatness	Value	Brand / Formula
Length	750 μm	l
Diameter	3 μm	year
Surface	14,000 μm^2	$2 \times \pi \times r \times l$
The surface including the venules participating in the exchange of substances	25,000 μm^2	
Number of capillaries	40×10^9	
total area	1000 m^2	



Fenestrated blood capillary of the pancreas. Inside is an erythrocyte. (electron microscope image)

The capillary wall consists of endothelium, basement membrane and only isolated pericytes. Pericytes can regulate vessel lumen. At rest, only 25-35% of capillaries are active. Capillaries are not evenly distributed throughout the body (from 300-400 per mm^3 in striated muscles to 2500-3000 per mm^3 in the myocardium).

The exchange of gases and substances takes place at the capillary level, the degree of permeability is influenced by the distribution of endothelium. We distinguish three types of layout:

- **Continuous endothelial lining**,
- **fenestrated endothelium** - permeable to water and small hydrophilic molecules,
- **Discontinuous endothelium** - fully permeable to all plasma components.

By filtering the plasma through the capillary wall, **tissue fluid** occurs.

Links

Related Articles

- Tissue fluid

References

- TROJAN, Stanislav, et al. *Medical Physiology*. 4th, revised and edited edition. Prague : Grada Publishing, a.s, 2003. 772 pp. ISBN 80-247-0512-5.
- LÜLLMANN-RAUCH, Renate. *Histology*. 1. edition. Prague : Grada, 2012. 576 pp. ISBN 978-80-247-3729-4.

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