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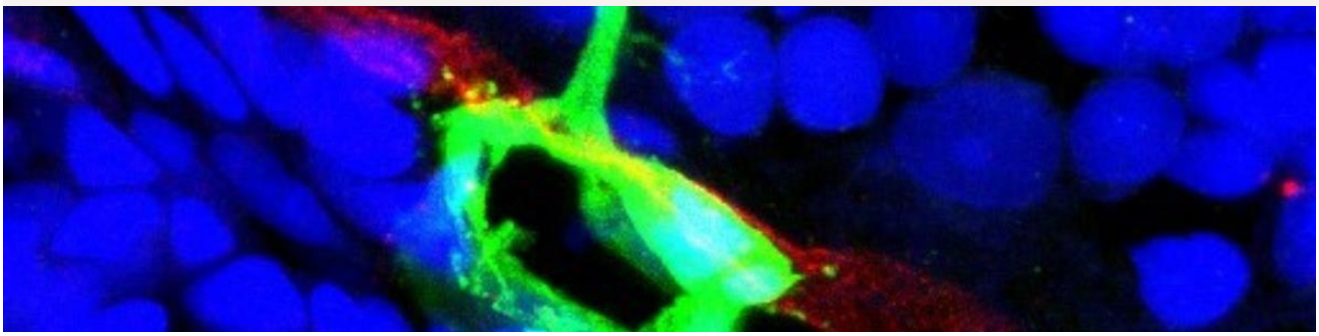
COMMUNIQUÉ DE PRESSE



Wednesday, 3rd April 2024

Neurosciences. Researchers explain how brain blood vessels are formed

Recherche

Led by Benoit Vanhollebeke, a team from Université libre de Bruxelles has discovered that blood vessels irrigating the brain obey different, totally unprecedented rules : the cerebral vessels are equipped with a specific enzyme that is essential for them to invade the brain. Published in the revue Nature, their study gives hope that it will one day be possible to develop therapeutic approaches specifically targeting cerebral vessels.

Cardiovascular diseases, including myocardial infarction and stroke, are the world's leading cause of death, claiming around 18 million lives a year. This observation justifies the adage that you are only as old as your arteries, and explains why researchers are working relentlessly to understand how the cardiovascular system develops and functions.

Led by **Prof. Benoit Vanhollebeke - Professor at the Department of Molecular Biology, Faculty of Science, Université libre de Bruxelles** and recent awardee of the 2024 Lambertine Lacroix Prize for Cardiovascular Diseases - a ULB team has just made an important discovery. Contrary to the generally accepted idea that blood vessels form in a similar way throughout the body, Giel Schevenels and colleagues have discovered that those irrigating the brain obey different, totally unprecedented rules. The researchers discovered that cerebral vessels are equipped with a specific enzyme that is essential for them to invade the brain. Their study is published in the revue Nature, 3 April 2024.

"*What I find noteworthy in this study is that the mechanism of brain angiogenesis that we are disclosing simultaneously enables the vessels to acquire specific properties adapted to the neuronal environment, known as the blood-brain barrier. So there seems to be a functional alignment between the very birth of the vessels and their specific functions*", explains Benoit Vanhollebeke.
The blood-brain barrier is a set of characteristics of the brain's blood vessels that strongly limit exchanges between blood and brain tissue. This protects the brain from toxic components circulating in the blood,

"*The identification of this mechanism gives us hope that it will one day be possible to develop therapeutic approaches specifically targeting cerebral vessels, which is an important clinical issue in many neurological pathologies*", concludes the researcher.

Research in Professor Vanhollebeke's laboratory has been supported in recent years by the ERC, the FNRS, the Queen Elisabeth Medical Foundation, the ULB Foundation and the Welbio.

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