

# New findings on intercellular communication

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Led by Benoit Vanhollebeke, WELBIO investigator at the Université libre de Bruxelles (ULB), the Laboratory of Neurovascular Signaling has solved an important enigma of cell signaling related to Wnt signaling specificity.

Wnt is ancient pathway, whose evolutionary appearance dates back to the emergence of multicellular animals. It plays pivotal roles in cell to cell communication and governs several aspects of embryonic development and tissue homeostasis. When dysfunctional, Wnt signaling can be at the origin of many diseases, in particular several cancers. With 10 receptors and 19 ligands, recognizing each other, the complexity of the pathway seemed dizzying. How do vertebrate cells manage to interpret the many Wnt signals they encounter and trigger an adequate response? It is such an interpretation mechanism that ULB researchers have just discovered.

Previous findings had shown that two proteins expressed by cerebral endothelial [cells](#), Gpr124 and Reck, are required for cerebrovascular development in response Wnt7 ligands. The team went on to study the mechanism by which the complex operates. Using genetic, biophysical and zebrafish experiments, researchers have shown that the complex Gpr124 / Reck acts as a decoding module: Reck recognizes the Wnt7 [ligand](#), but the presence of Gpr124 is necessary to trigger Wnt7 signaling via Frizzled receptors. Their results are detailed in *Science*.

These discoveries will enable researchers to refine their understanding of Wnt signaling and its multiple regulations. This would also make it

possible to consider new treatments for diseases, such as cancers or neurovascular diseases.

**More information:** Marie Eubelen et al. A molecular mechanism for Wnt ligand-specific signaling, *Science* (2018). [DOI: 10.1126/science.aat1178](https://doi.org/10.1126/science.aat1178)

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