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### **Frizzled-4 a potential neuronal marker of the enteric nervous system**

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The enteric nervous system (ENS) is part of the PNS and regulates the blood flow and the peristaltic and secretory activity of the gut. There is evidence that the ENS is also involved in the function of the mucosal immune system and influences the epithelial stem cell compartment of intestinal mucosa.

Several groups have demonstrated that multipotent, self-renewing ENS progenitor cells persist in the fetal and postnatal gut of humans and rodents. These neural progenitors can be expanded and differentiated in neurons and glia cells under appropriate cell culture conditions.

An important role for the regulation of stem cells and progenitor cells has been attributed to the canonical Wnt pathway. The Wnt signaling cascade is initiated upon binding of the secreted Wnt ligand to a member of the family of Frizzled (Fzd) transmembrane receptors and a specific co-receptor of the family of low-density lipoprotein receptors.

We have recently identified Fzd-4 expressing cells in the ENS of human small and large intestine. We further characterized, positive cells from human perinatal und adult gut

samples using RT-PCR, immunohistochemistry and FACS. Additionally, Fzd-4 positive cells were separated by MACS-Sorting to investigate the proliferation and differentiation capacity of selected cells *in vitro*. Our results indicate that Fzd-4 could be an interesting marker to isolate and enrich enteric progenitors and neural cells of the enteric nervous system.

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