Therapeutic targeting of PC1/3 deficiency: from obesity to gastrointestinal disorders.

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Abstract

Protein convertase 1/3 (PC1/3), encoded by the *PCSK1* gene, is an enzyme that belongs to the family of seven highly conserved subtilisin-like serine proteases. PC1/3 is expressed in neuronal and endocrine cells, including endocrine cells in the gut, the β cells in the pancreas and in hypothalamic nuclei (POMC and AgRP neurons) known to function as centres for energy homeostasis. After hospitalization and parental nutrition these PCSK1 null patients are reported with severe early onset obesity and postprandial hypoglycaemia. PC1/3 is highly expressed in the enteroendocrine cells of the small intestine and co-localizes with gut hormones like cholecystokinin (CCK), glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1,2 (GLP-1 and GLP-2).Remarkably however, the gastrointestinal tract has a (near-)normal histology and no chronic infection. How PC1/3 deficiency leads to chronic diarrhea is still unclear.

Biography:

Laetitia Aerts is a biochemist and biotechnologist and ending PhD at the laboratory for biochemical neuroendocrinology at the centre for human genetics at KU Leuven. She won several scientific awards as poster and presentation awards (ref Science battle, Diabetes Liga). Beside her role as an assistant teacher and supervisor of master students, she started a new thematic program: metabolic diseases in the doctoral school of biomedical sciences at KU Leuven.

Speaker Publications:

1. Serotonergic modulation of visual cortex plasticity, January 2017; Frontiers in Neuroscience

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