Study finds link between blood components and brain disorders

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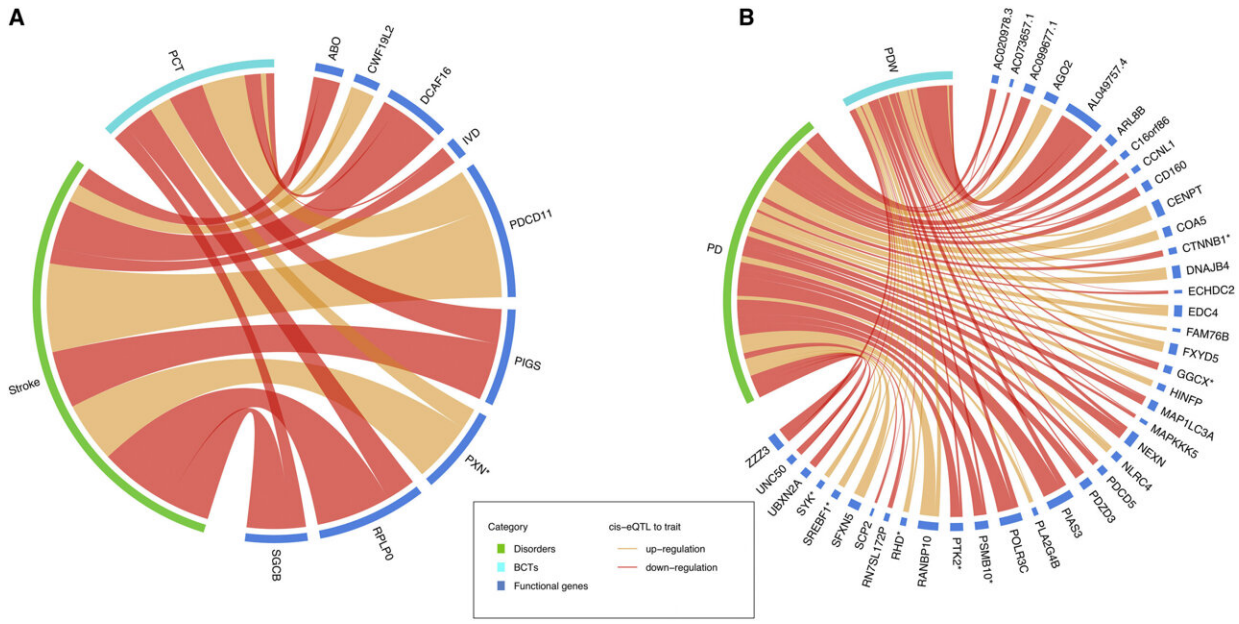

Summary of FDR-significant functional genes associated with PCT-stroke and PDW-PD trait pairs, with consistent direction of SMR effects (A and B) PCT-stroke (A) and PDW-PD (B) trait pairs. The width of each line represents the SMR association strength. Line color indicates whether upregulation (orange) or downregulation (red) of functional genes is associated with increased disorder risk or BCT values. Genes with an asterisk symbol are known drug targets. Credit: *Cell Genomics* (2023). DOI: 10.1016/j.xgen.2022.100249

A Mater Research study has identified a previously unknown genetic link between platelets and Parkinson's Disease, with findings published

in *Cell Genomics*.

The study, led by Mater Research and The University of Queensland's Associate Professor Jake Gratten and Dr. Yuanhao Yang, analyzed data from large-scale genetic studies to improve understanding of cause and effect relationships between blood measures and common neurological and psychiatric disorders.

Lead author Dr. Yang said the research came about following reports of associations between a range of different blood measures and risk of stroke, multiple sclerosis and depression.

"These results sparked interest in developing blood-based biomarkers for common brain disorders, but it was unclear whether there was a genetic basis to these relationships," Dr. Yang said.

"Our study identified a broad landscape of genetic overlap between blood cell measures and 11 neurological and psychiatric disorders."

"One notable finding was a cause and effect relationship between increased platelet distribution width and risk for Parkinson's Disease, suggesting that platelet parameters could be potential biomarkers for early detection of Parkinson's Disease."

"We also identified numerous genes shared by specific blood cell measures and brain disorders, some of which are targets of drugs that are approved for other conditions—this represents potential for repurposing those drugs for common brain disorders."

Senior author A/Prof Gratten said the findings "provide a foundation for future work to improve prevention and prognosis of common neurological diseases and psychiatric disorders."

More information: Yuanhao Yang et al, The shared genetic landscape of blood cell traits and risk of neurological and psychiatric disorders, *Cell Genomics* (2023). DOI: 10.1016/j.xgen.2022.100249

Provided by Mater