Hinokitiol, molecule from Japanese cypress tree shows promise in iron related disorders

Researchers find key molecule that could lead to new therapies for anemia and other iron disorders. New findings reported in *journal Science* by a multi-institutional team, including researchers from University of Illinois, Dana-Farber/Boston Children's Cancer and Blood Disorders Center, Brigham and Women's Hospital and Northeastern University, could impact whole range of diseases related to iron metabolism.

The team has discovered a small molecule hinokitiol, found naturally in Japanese cypress tree leaves has shown to promote gut iron absorption in rats and mice, as well as hemoglobin production in zebrafish. Researchers observed that hinokitiol molecules can bind to iron atoms and move them across cell membranes and into/out of mitochondria, despite an absence of the native proteins that would usually carry out these functions.

Burke's team initially found that hinokitiol could transport iron across cell membranes in vitro before reaching out to Paw and other collaborators to test its efficacy in animal models. Paw, co-senior author on the new Science paper and physician at Dana-Farber/Boston Children's, and members of his lab demonstrated that hinokitiol can successfully reverse iron deficiency and iron overload in zebrafish disease models.

Based on the findings in animal studies hinokitiol does seem to have big therapeutic potential in treating disorders related to iron metabolism. However further research is needed to elucidate its utility in humans.

Adapted from press release by Boston Children's Hospital.

Posted by Sreeram Penna at 1:28:00 PM

Labels: Anemia, Animal-study, Hemochromatosis, Iron-deficiency-anemia