<html><iframe width="560" height="315" src="https://www.youtube.com/embed/TwJ0DuI2-lc" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture; web-share" allowfullscreen></iframe></html>

DCYTB (duodenal cytochrome b) is an enzyme that plays an important role in iron absorption in the small intestine. It is primarily expressed in the duodenum, which is the first part of the small intestine where most iron absorption occurs.

DCYTB is a transmembrane protein that is localized to the brush border membrane of enterocytes, the cells lining the small intestine. It is involved in the reduction of non-heme iron to a more absorbable form, Fe2+. This reduction step is necessary because non-heme iron in the diet is predominantly present in the oxidized Fe3+ form, which is poorly absorbed by the body.

DCYTB uses electrons from ascorbate (vitamin C) to reduce Fe3+ to Fe2+, which can then be transported into the enterocytes by another protein called DMT1 (divalent metal transporter 1). Once inside the enterocyte, Fe2+ can be further processed and transported into the bloodstream for delivery to other parts of the body.

DCYTB is regulated by various factors, including iron status, hypoxia, and inflammation. Its expression is upregulated in response to iron deficiency, which increases the efficiency of iron absorption. On the other hand, its expression is downregulated in response to inflammation, which can impair iron absorption and lead to anemia of inflammation.

DCYTB is an important component of the mechanism by which the body regulates iron homeostasis and ensures adequate iron absorption. Dysregulation of DCYTB expression or activity can lead to iron overload or deficiency, both of which can have negative health consequences.