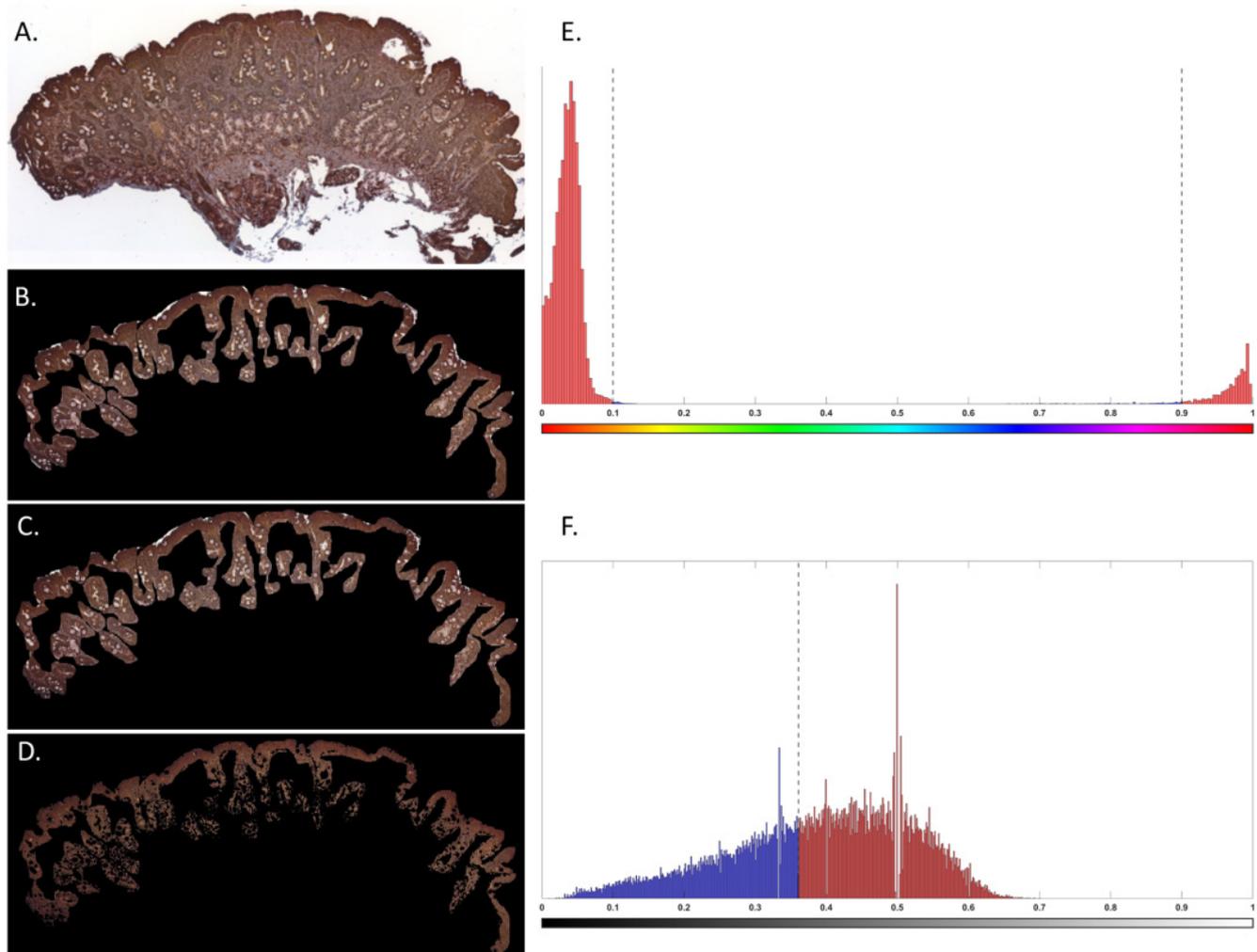
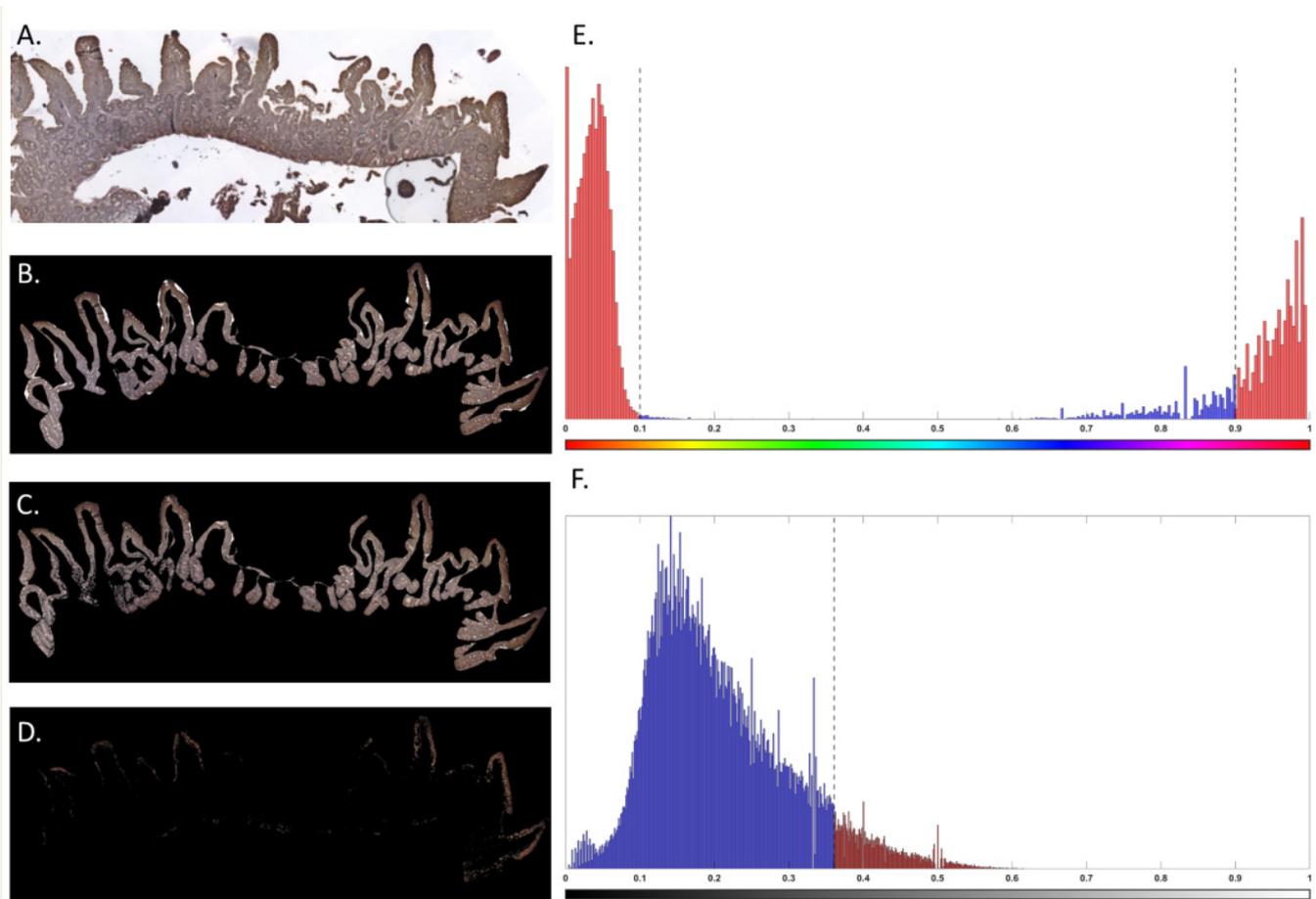


**Supplementary Table S1.** Specific characteristics of the staining procedures

Target	Antibody	Host	Dilution	Incubation	Secondary antibody
Duodenal cytochrome B	Anti-CYBRD1, HPA014757, Atlas Antibodies, Stockholm, Sweden	Rabbit	1:800	Overnight	Bionylated anti-rabbit
Divalent metal transporter 1	Anti-DMT1, ab55812, Abcam, Cambridge, UK	Rabbit	1:150	Overnight	ImmPRESS peroxidase Anti rabbit Ig
Ferroportin	SLC40A1 Antibody, PA5-22993, Thermo Fisher Scientific, Rockford, USA	Rabbit	1:700	Overnight	ImmPRESS peroxidase Anti rabbit Ig
Hephaestin	Hephaestin (L-20), sc-49969, Santa Cruz Biotechnology, Dallas, USA	Goat	1:400	Overnight	Bionylated anti-goat antibody
Transferrin receptor 1	Transferrin Receptor / CD71 Antibody (H68.4), Invitrogen, Thermo Fisher, Rockford, USA	Mouse	1:150	Overnight	ImmPRESS peroxidase Anti rabbit Ig



**Figure S1.** The process for measuring the saturation and stained area of iron transporter proteins in enterocytes as exemplified by ferroportin staining in a patient with subtotal villous atrophy and anemia. (A) The scanned ferroportin stained section. (B) The epithelial layer free hand selected using Fiji Image J program. (C) The red color chosen from the hue channel. (D) The saturation thresholded to show the area of the ferroportin staining. (E) A histogram of the hue channel, where the red color is chosen. (F) A histogram of the saturation channel.



**Figure S2.** The process for measuring the saturation and stained area of iron transporter proteins in enterocytes as exemplified by ferroportin staining in a control child with anemia. **(A)** The scanned ferroportin stained section. **(B)** The epithelial layer free hand selected using Fiji Image J program. **(C)** The red color chosen from the hue channel. **(D)** The saturation thresholded to show the area of the ferroportin staining. **(E)** A histogram of the hue channel, where the red color is chosen. **(F)** A histogram of the saturation channel.