

Supplementary methods

Immunohistochemistry was performed on paraffin embedded human or mouse colonic tissue using a primary antibody against PAK1 (cell signaling 2602) and anti-rabbit isotype specific secondary antibody. Slides were dewaxed then rehydrated using an alcohol row. Endogenous peroxidase was blocked using hydrogen peroxide in methanol and antigens were retrieved using citrate buffer. Tissue was blocked in horse serum then incubated with 1:40 PAK1 at 4° C overnight. Addition of the biotinylated secondary antibody 1:300 was added for 1 h at room temperature followed by an avidin-biotin-HRP complex (Vectastain ABC Kit, PK-6100; Vector Laboratories) for 30 min. 3,3'-diaminobenzidine (32750; Fluka) was used for visualization, counterstaining of the nuclei was done with hematoxylin. Slides were dehydrated with an alcohol row followed by Histofluid (6900002; Marienfeld, Lauda Koenigshofen, Germany) embedding. Images were recorded at 40× magnification using an Olympus BH-2 microscope and Olympus E330 digital camera.