GENERATION, CHARACTERIZATION AND SCREENING OF ENT001 A NEW THERAPEUTIC TOOL FOR IBD

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A fully human monoclonal antibody (Ent001) targeting the IGFBP3/ TMEM219 death receptor pathway protected intestinal stem cell self-renewal and restored growth of mini-gut organoids from Crohn's disease patients in vitro.

KEY POINTS

- Anti-TMEM219 monoclonal antibody Ent001 showed the highest potency in displacing IGFBP3/ TMEM219 binding and rescuing intestinal stem cell expression and function in human mini-gut organoids from healthy donors.
- In proof-of-concept studies using mini-guts from Crohn's disease patients, Ent001 restored organoid growth and intestinal stem cell marker expression while downregulating the proapoptotic factor Caspase 8.
- Both anti-IGFBP3 and anti-TMEM219 monoclonal antibodies demonstrated high affinity binding to target antigens and protected intestinal stem cell self-renewal in vitro.
- The authors propose Ent001 as a candidate for further development in in vivo models and potential clinical studies for human diseases involving intestinal stem cell dysfunction.
- This work may be of interest to researchers in inflammatory bowel disease therapeutics and intestinal regeneration; financial disclosures include patent holdings and employment by Enthera S.r.l.

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