The role of the EGFR in intestinal stem cells

The small intestine can be divided in two parts: finger-like structures called villi cover the surface of the lumen and villi are surrounded by underlying pockets termed crypts. Both structures are covered with a columnar epithelium. The crypt base harbors LGR5+ stem cells and Paneth cells. Paneth cells are playing a very important role for stem cell function by secreting essential factors like Wnt, EGF and Notch ligands, and are also involved in the antimicrobial response. It has been shown that EGF is an essential survival factor for in vitro intestinal organoid cultures. However, its precise role for in vivo stem cell function has not yet been elucidated. I employed mice lacking the EGFR in different cell types of the intestine namely Lgr5+: (1) EGFRfl/fl LGR5CreERT2EGFP mice (2) EGFRfl/fl Villin Cre mice

The Intestinal Stem Cell - NCBI - NIH Yap-dependent reprogramming of Lgr5(+) stem cells drives intestinal regeneration and cancer. Consistent with key roles for regenerative signalling in expansion of Apc(-/-) organoids requires the Egfr module of the Yap **Adult Stem Cells in Aging, Diseases and Cancer - Google Books Result** In the crypts self-renewal of stem cells and production of progeny EGFR signals may also play a role in human inflammatory bowel disease. **Lrig1 controls intestinal stem-cell homeostasis by negative - Nature** In the intestine, direct contact to a Paneth cell is necessary and sufficient to maintain the stem cell character, whereas loss of direct contact to **Hemocytes control stem cell activity in the Drosophila intestine** EGFR/Ras Signaling Controls Drosophila Intestinal Stem Cell Proliferation via EGFR signaling also plays an important role in regulating ISC **Flavors of EGFR-Ras signals impacting intestinal homeostasis** EGFR, Wingless and JAK/STAT signaling cooperatively maintain Drosophila intestinal stem cells. Xu N(1), Wang Tissue-specific adult stem cells are commonly associated with local niche for their maintenance and function. **Model organisms in inflammation and cancer: - Google Books Result** Proliferative plasticity of somatic stem cells thus allows adapting homeostasis of the intestinal epithelium, while Bmi1+ stem cells ISCs and their function are maintained throughout the life of Indeed, EGFR and Frizzled mutant clones were shown to be **The role of the EGFR in intestinal stem cells, 978-3-639-85609-5** Intestinal stem cells (ISC) reside at the bottom of crypts, where they are . Egfr and ErbB3 function is required for expansion of the stem cell **Stem Cells, Tissue Engineering and Regenerative Medicine - Google Books Result** To accommodate these functions, ISC proliferation is regulated dynamically by Keywords: Drosophila, EGF signaling, Intestinal stem cells. **The**

EGFR-HER2 module: a stem cell approach to - Nature In the intestine, direct contact to a Paneth cell is necessary and sufficient to maintain the stem cell character, while loss of direct contact to these **EGFR/Ras Signaling Controls Drosophila Intestinal Stem Cell** Drosophila EGFR pathway coordinates stem cell proliferation and gut remodeling following infection. Role of the endothelium in inflammatory bowel diseases. **The role of the EGFR in intestinal stem cells: Gocen Vasfiye Bilge** 36 ?-Catenin hematopoietic stem cell aging role 45 intestinal stem cell function role 53 Epidermal growth factor receptor (EGFR), intestinal stem cell function **Lrig1 controls intestinal stem cell homeostasis by negative** To explain the roles for EGFR and HER2 as prime drivers and targets, we take .. within the intestinal stem cell niche by tuning EGFR/ERBB. **EGF signaling regulates the proliferation of intestinal stem cells in** Notch lineages and activity in intestinal stem cells determined by a new set of The conserved role of Notch signaling in controlling intestinal cell fate (2011 DEC 5) National Institute of Biology Science, Beijing: EGFR, Wingless and **Maintaining tissue homeostasis: dynamic control of somatic stem** cell niche that provides essential growth factors and thus generates a microenvironment that maintains stem cell function (Barker et al.,. 2008 Bryder et al., 2006 **EGF signaling activates proliferation and blocks apoptosis of mouse** B: Signaling pathways controlling intestinal stem cell proliferation and .. A role of other pathways, including Notch and EGFR, appear likely, but have not been **Injury-stimulated Hedgehog signaling promotes regenerative** Intestinal stem cells (ISCs) reside at the basal ends of the crypts, . Murine ISCs are also known to require EGFR/ErbB signaling for their **Induced Quiescence of Lgr5+ Stem Cells in Intestinal - Cell Press** Drosophila posterior midgut contains self-renewing intestine stem cells To explore the role of Hh signaling in Drosophila adult midgut homeostasis and . levels of JAKSTAT and EGFR pathway ligands in whole midguts of the flies with **Genetic control of intestinal stem cell specification and development** Combined EGFR/Wnt/Notch inhibition produces enteroendocrine Lgr5+ adult intestinal stem cells are highly prolifera- tive throughout life. . EECs clearly play crucial roles in controlling various aspects of in- testinal function **Buy The Role of the Egfr in Intestinal Stem Cells Book Online at Low AACR 2016: Abstracts 2697-5293: - Google Books Result** The Identity and Localization of Intestinal Stem Cells .. These studies demonstrate the essential role that EGFR signaling plays in intestinal homeostasis. **Intestinal stem cell function in Drosophila and Mice - NCBI - NIH** (2015) EGFR/Ras Signaling Controls Drosophila Intestinal Stem Cell EGFR/Ras/MAPK signaling has diverse functions in regulating cell **YAP-dependent reprogramming of Lgr5 + stem cells drives intestinal CellsAdvances in Research and Application: 2012 Edition - Google Books Result** Keywords: Drosophila, intestinal stem cells, regeneration, Dpp signaling such as vein, in the visceral muscle, which then activate EGFR signaling in ISCs. . The positive role of hemocyte-derived Dpp in regulating ISC Buy The role of the EGFR in intestinal stem cells on ? FREE SHIPPING on qualified orders. **EGFR, Wingless and JAK/STAT signaling cooperatively - NCBI** Intestinal stem cells (ISCs) in the pMG produces committed Notch signaling plays a central role in controlling the binary fate choice: high **The EGFR-HER2 module: a stem cell approach to understanding a** intestinal stem/progenitor cells in long-term monolayer cell culture. to clarify the role of EGF signaling in intestinal stem/progenitor cells, **EGFR/Ras Signaling Controls Drosophila Intestinal Stem Cell** The intestine constitutes an excellent system for studying stem-cell function. .. In Lrig1-knockout animals, Egfr activation is uniform within the crypt (Fig. 4h,i). **EGFR/Ras Signaling Controls Drosophila Intestinal Stem Cell** Here we present results from a screen of known bioactives, that reveal an unexpected role of the EGF receptor, EGFR, in RAF(gof) intestinal stem cell tumors.