



Life Sciences Seminar

Two types of stomach stem cells for the homeostatic turnover of gastric corpus glands

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The gastric corpus is comprised of a glandular epithelium that consists of functionally specialized gastric cells, secreting gastric acid, peptidase, and mucin. Proliferating cells are often observed around the isthmus, the upper middle part of gastric corpus glands. Based on the location of cell proliferation and nucleotide labeling experiments, the adult gastric stem cell population has been predicted to reside around the isthmus region of the stomach. Recently, Troy+ chief cells were found to have stem cell activity at the base of the corpus glands. Troy+ chief cells are largely quiescent so that the overall contribution of Troy+ chief cells to the normal turnover of the tissue seems marginal. However, different injury stimuli lead to an activation of this dormant stem cell population and an increase in proliferation in the gland base. In order to understand the organization and cellular hierarchy in the gastric corpus epithelium, we utilized a novel lineage tracing strategy, cell type specific depletion models, as well as gastric organoid cultures. Our results indicate that the homeostatic tissue turnover of gastric corpus glands is simultaneously fueled by base and isthmus located stem cell populations. Gastric corpus glands furthermore show a highly ordered epithelial structure which further constrains the behavioral dynamics of gastric stem cells in the isthmus compartment.

Wednesday, March 6, 2019 01:00pm - 02:00pm

IST Austria Campus Mondi Seminar Room 2, Central Building



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