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IN BRIEF

GUT MICROBIOTA

Microbe–mucus interactions in the intestine

The intestinal mucus layer is shaped and modulated by the microbiota. In a new study, the inner mucus layer of germ-free mice was found to be more easily penetrable to bacteria-sized beads compared with conventionally raised mice. When germ-free mice were inoculated with conventional bacteria, mucus in the small intestine detached 5 weeks after colonization, and the colonic inner mucus required 6 weeks to become impenetrable. The microbiota composition of the small intestine was similar in conventionally raised donor mice and colonized germ-free mice for 3 weeks, with shifts thereafter and normalization after 7 weeks.

Original article Johansson, M. E. V. *et al.* Normalization of host intestinal mucus layers requires long-term microbial colonization. *Cell Host Microbe* doi:10.1016/j.chom.2015.10.007

NAFLD

MicroRNA-21 inhibition restores PPARα expression in NASH

Upregulation of microRNA-21 has previously been reported in the liver of patients with NASH. A new study now examined its role in the development of the disease. Liver microRNA-21 expression was suppressed in different mouse models of NASH, using a knockout strain and the antagonist antagomir-21. MicroRNA-21 inhibition or suppression successfully reduced liver injury, inflammation and fibrosis, by restoring PPARα expression, a known microRNA-21 target, which is decreased in the liver of mice with NASH.

Original article Loyer, X. *et al.* Liver microRNA-21 is overexpressed in non-alcoholic steatohepatitis and contributes to the disease in experimental models by inhibiting PPARα expression. *Gut* doi:10.1136/gutjnl-2014-308883

ULCERATIVE COLITIS

Who benefits the most from etrolizumab in ulcerative colitis?

Etrolizumab, a monoclonal antibody against the β7 integrin subunit, has been found effective in ulcerative colitis. Now, a retrospective analysis of data from 110 patients with ulcerative colitis in a phase II placebo-controlled trial of etrolizumab and 21 patients who did not receive the drug or did not have IBD, reports that patients expressing high levels of granzyme A or integrin alpha E mRNA benefit most from etrolizumab. A reduction in T-cell activation and inflammatory cytokines seems to be involved.

Original article Tew, G. W. *et al.* Association between response to etrolizumab and expression of integrin alpha E and granzyme A in colon biopsies of patients with ulcerative colitis. *Gastroenterology* doi:10.1053/j.gastro.2015.10.041

COLORECTAL CANCER

Vitamin D and calcium do not prevent adenoma recurrence

A randomized, double-blind, placebo-controlled trial has analyzed the potential benefit of supplementation with vitamin D, calcium or both in the prevention of colorectal adenomas. A cohort of 2,259 participants with recently diagnosed and removed adenomas received daily vitamin D3 (1,000 IU), calcium as carbonate (1,200 mg) or both with follow-up colonoscopies 3 or 5 years after the start of the therapy. The reduced risk of recurrent colorectal adenoma was not statistically significant under this regimen and few serious adverse events were reported.

Original article Baron, J.A. *et al.* A trial of calcium and vitamin D for the prevention of colorectal adenomas. *NEJM* doi:10.1056/NEJMoa1500409