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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 PPAR $\alpha$ 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 PPAR $\alpha$  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 PPAR $\alpha$  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  $\beta$ 7 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