

IN BRIEF

GUT MICROBIOTA**PPIs alter gut microbiota composition**

Steves *et al.* performed 16S ribosomal RNA amplification on faecal samples from 1,827 twins to investigate the association between PPI use and composition of the gut microbiota. A lower abundance in gut commensals and reduced microbial diversity were identified in PPI users compared with non-users, along with an increase in the abundance of oral and upper gastrointestinal tract commensals. These findings were replicated in an independent interventional study. The authors conclude by cautioning against the overuse of PPIs and suggest that further study is needed in this area.

ORIGINAL ARTICLE Steves, C. J. *et al.* Proton pump inhibitors alter the composition of the gut microbiota. *Gut* <http://dx.doi.org/10.1136/gutjnl-2015-310861>

VIRAL HEPATITIS**New entry pathway for HCV**

The entry of HCV into host cells involves a variety of host factors; CD81 in particular has a critical role. However, the authors of a new study have reported that Huh7.5 cells cultured under hypoxic conditions demonstrated increased HCV entry as a result of expression of very-low-density lipoprotein receptor (VLDLR). Furthermore, ectopic VLDLR expression conferred susceptibility to HCV entry of CD81-deficient Huh7.5 cells. VLDLR might represent a novel HCV entry pathway, independent of CD81.

ORIGINAL ARTICLE Racaniello, V. *et al.* Hepatitis C virus utilizes VLDLR as a novel entry pathway. *Proc. Natl Acad. Sci. USA* **113**, 188–193 (2016)

IBS**Risk factors for IBS: data from the US military**

Data from the US military's Millennium Cohort Study was used to examine risk factors for new-onset IBS among military personnel on active duty in a new study published in *The American Journal of Gastroenterology*. 41,175 cohort members were included in the study, and 314 new-onset cases of IBS were identified. Risk factors included previous case of infectious gastroenteritis, number of life stressors, female sex and anxiety syndrome. Importantly, anxiety or depression in combination with infectious gastroenteritis was found to increase the risk of subsequent IBS compared with infectious gastroenteritis alone.

ORIGINAL ARTICLE Riddle, M. S. *et al.* The epidemiology of irritable bowel syndrome in the US military: findings from the Millennium Cohort Study. *Am. J. Gastroenterol.* <http://dx.doi.org/10.1038/ajg.2015.386>

LIVER**Characteristics of liver-infiltrating MAIT cells**

Jeffery and colleagues characterized liver-infiltrating mucosal-associated invariant T (MAIT) cells and their role in biliary immune surveillance. They found that these cells predominantly localize to bile ducts in the portal tracts, as well as being present in the hepatic sinusoids. Interestingly, MAIT cells upregulated IFN γ and CD40 ligands and degranulated in an MR1-dependent, cytokine-independent manner in response to macrophages, biliary epithelial cells and liver B cells that had been exposed to *Escherichia coli*. These findings are evidence of an immune surveillance effector response of MAIT cells to biliary epithelial cells in human liver.

ORIGINAL ARTICLE Jeffery, H. C. *et al.* Bacteria exposed biliary epithelium and liver B cells activate intrahepatic MAIT cells in an MR1-dependent manner. *J. Hepatol.* <http://dx.doi.org/10.1016/j.jhep.2015.12.017>