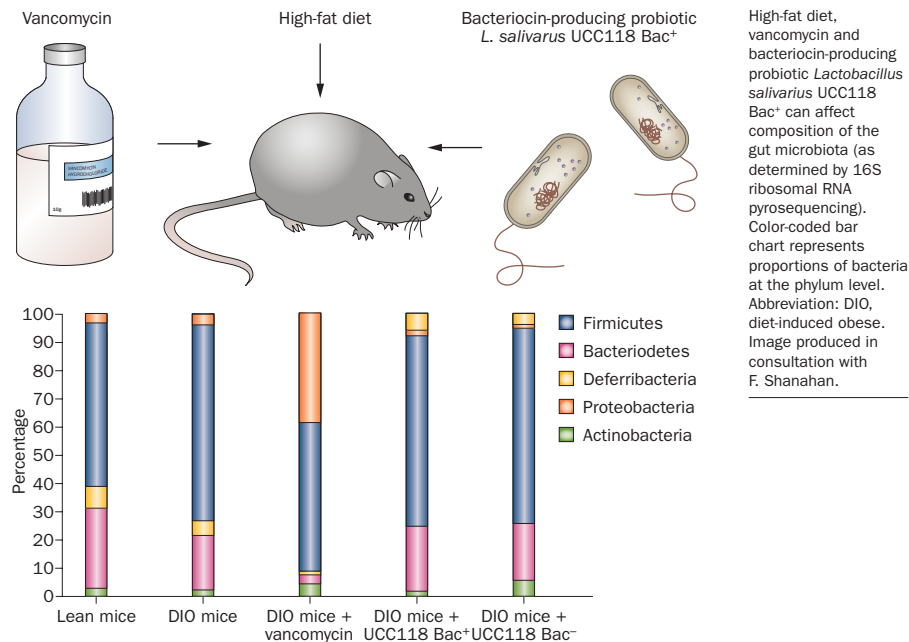


MICROBIOTA

Manipulating the microbiota in obesity



“Study data support the role of the gut microbiota in metabolic dysfunction and provide the rationale for manipulation of the microbiota as a therapeutic or prophylactic strategy,” says Fergus Shanahan, discussing new research published in *Gut* that explores how different antimicrobial strategies might affect metabolic abnormalities.

Shanahan *et al.* treated lean and obese mice with two different antimicrobial interventions, the antibiotic vancomycin or broad-spectrum bacteriocin (produced by the probiotic strain *Lactobacillus salivarius* UCC118 Bac⁺). Then, the composition of the gut microbiota was examined using 16S ribosomal RNA pyrosequencing.

Both interventions altered the gut microbiota in obese mice, but in distinct ways at the phylum, family and genus level. In comparison with controls, vancomycin led to a marked

increase in Proteobacteria and decrease in Firmicutes, whilst bacteriocin had no effect on Firmicutes levels but did increase proportions of Bacteroidetes and Proteobacteria. Improvements in metabolic abnormalities were, however, only observed with vancomycin; obese mice treated with vancomycin gained less weight during the study period—despite eating the same high-fat food—than obese controls that did not receive the antibiotic.

These new findings are a “proof of principle for the potential metabolic benefits of manipulating the microbiota,” notes Shanahan who stresses that more work is needed before translation to the clinic.

Katrina Ray

Original article Murphy, E. F. *et al.* Divergent metabolic outcomes arising from targeted manipulation of the gut microbiota in diet-induced obesity. *Gut* doi:10.1136/gutjnl-2011-300705