

Working Group 3

Next Generation Probiotics

Chairs: Paul O’Toole, Julian Marchesi and Colin Hill.

This Working Group will look at the development of next generation probiotics (NGP), particularly focussing on those which are in pre-clinical development or already in humans. To quote from the recent consensus paper on probiotics prepared by ISAPP:

‘Metagenomic studies of the human microbiome have identified a number of genera and species that are associated with a robust gut microbiota composition, and experimental work in animal models of disease has provided evidence that some of them might be useful tools to mitigate intestinal inflammation, induce immune regulation, or enhance intestinal barrier function. These microbes include Akkermansia muciniphila and Faecalibacterium prausnitzii together with other butyrate-producing bacteria such as Roseburia spp. and Eubacterium hallii. Whether these microbes can be used in foods, dietary supplements, medical foods, medical devices or drugs will depend on demonstration of safety and efficacy for these uses and within regulatory frameworks. The panel considered that such microbes clearly fall under the term probiotic, as long as suitable safety assessments are conducted. For these new probiotics, which might comprise little-studied species, it would seem advisable to proceed on a strain-by-strain basis until such time that there is sufficient information and mechanistic understanding for extrapolation to the species level.’

In this workshop we will have several presentations regarding these issues by some of the leading scientists in the field. Speakers already confirmed include Willem de Vos (*Eubacterium hallii* and *Akkermansia muciniphila*), Philippe Langella (*Faecalibacterium prausnitzii*), Johan van Hylckama Vlieg (Innovating in probiotics and therapeutic microbes in the microbiome era), Mark Smith (Openbiome; developing FMT). The session will be moderated by Julian Marchesi, Colin Hill and Paul O’Toole. Short presentations will be followed by a round table discussion with a view to identifying the challenges and advantages of developing non-traditional probiotics.