

## Dietary supplementation with spray-dried animal plasma proteins modifies the profile of the fecal microbiota in young mice

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### **Background and objectives:**

Oral administration of spray-dried porcine plasma (SDP) reduces the magnitude of the gut-associated lymphoid tissue (GALT) response in mice challenged with the *Staphylococcus aureus* enterotoxin B1. We have studied if feeding mice with 8% SDP, starting at weaning and for 14 days, can modify the profile of fecal microbial communities.

### **Methodology:**

DNA was extracted from fecal samples using phenol-chloroform method. The genomic study was done with the MiSeq Illumina, analyzing DNA from amplicon sequencing of prokaryotic 16S small subunit rRNA genes. For the statistical analysis the False Discovery Rate test was applied. Control and SDP-supplemented diets were supplied by APC Europe (Granollers, Barcelona, Spain).

### **Results and conclusions:**

At Phylum level, SDP reduced the relative weight of Actinobacteria (from 10.3% to 2.6%) and Verrucobacteria (from 15.2% to 11.3%) while increasing the Firmicutes (from 25.6% to 36.3%) population. At Family level, SDP strongly increased *Lactobacillaceae*, with well-known probiotic anti-inflammatory effects; *Porphyromonadaceae*, with species that are negatively correlated with the expression of pro-inflammatory cytokines; and *Lachnospiraceae*, involved in the regulation of regulatory T-lymphocytes homeostasis and the restoration of mucosal permeability. In conclusion, the SDP-induced changes in the microbiota profile are compatible with the well-known role of SDP on GALT modulation reducing intestinal inflammation.

**Acknowledgements:** We acknowledge the support of Dr. Alba García-Just and Dr. Chays Manichanh for technical and scientific support, and APC Europe SLU and SGR2014-1221 for financial support.