

Microbiota helps regulate behaviour in Autism Spectrum Disorders



A number of studies have suggested a role for disturbances in the gut microbial balance or dysbiosis, and gastrointestinal (GI) complications occurring in individuals with autism spectrum disorders (ASD). Subsets of these autistic patients with altered microbial compositions have been shown to exhibit improved behavioural symptoms with antibiotic treatment or when placed on restricted diets. A strong correlation has also been observed between GI status and autism severity. This study conducted at the California Institute of Technology worked to demonstrate GI barrier defects and microbiota alterations in the maternal immune activation (MIA) mouse model that is known to display features of ASD. Using oral treatment with the human gut commensal *Bacteriodes fragilis* they were able to correct gut permeability, alter microbial composition, and ameliorate defects in communicative, stereotypic, anxiety-like and sensorimotor behaviors. Concluding that these findings support a gut-microbiome-brain

connection in a mouse model of ASD and identify a potential probiotic therapy for GI and particular behavioral symptoms in human neurodevelopmental disorders.

[Hsaio, E. et al. 2013. Microbiota Modulate Behavioral and Physiological Abnormalities Associated with Neurodevelopmental Disorders. *Cell*.](#)