Bioactive Food Abates Metabolic and Synaptic Alterations by Modulation of Gut Microbiota in a Mouse Model of Alzheimer’s Disease

Syeda Tauqeerunnisa Begum, Ph.D.
Post-Doctoral Research Associate
Cannon Lab
School of Health Sciences

Tuesday, February 12, 2019
FRNY B124
4:30 p.m.

Abstract:

Recent investigations have demonstrated an important role of gut microbiota (GM) in the pathogenesis of Alzheimer’s disease (AD). GM modulates host’s health and disease by production of several substances, including lipopolysaccharides (LPS) and short-chain fatty acids (SCFAs), among others. Diet can modify the composition and diversity of GM, and ingestion of a healthy diet has been suggested to lower the risk to develop AD. In this study, we aimed to explore if inclusion of bioactive food (BF) in the diet may impact central pathological markers of AD by modulation of the GM. GM analysis revealed that pro-inflammatory bacteria were more abundant in 3xTg-AD mice, compared to wild-type, while ingestion of combination of BF was able to restore the GM’s composition, LPS, and propionate levels to control values. This study shows that the neuroprotective effects of BF may be mediated, in part, by modulation of GM and the release of neurotoxic substances that alter brain function.