score, duration of hospitalization, and antidepressant dose equivalents as nuisance covariates.
**Results:** We found that the percentage of HDRS decrease after treatment predicted rs-FC. ICC analysis identified 2 clusters where changes in HDRS scores were significantly associated with rs-FC, with increased connectivity in the supramarginal gyrus (pFDR = 0.002) and decreased connectivity in the amygdala and parahippocampal gyrus (pFDR = 0.047).
**Conclusions:** Our results suggest that altered connectivity of the supramarginal gyrus, amygdala and parahippocampal gyrus is related to antidepressant treatment response. Given that these brain areas are implicated in emotional processing and mood, it is conceivable that a better integrity of brain connectivity may facilitate treatment response in major depression.

**Disclosure of Interest:** None Declared

## EPP0992

## The efficacy psychobiotics for depression treatment

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**Introduction:** Psychobiotics are a group of probiotics that affect the central nervous system related functions and behaviors mediated by the gut-brain-axis via immune, humoral, neural, and metabolic pathways to improve not only the gastrointestinal function but also the antidepressant and anxiolytic capacity.
**Objectives:** To assess the efficacy the combination of selective serotonin reuptake inhibitors antidepressants (SSRI) and probiotic supplement containing Lactobacillus Plantarum CECT7485 and Lactobacillus Brevis CECT7480 (PLANTARUM) in patients with mild-to-moderate depression.
**Methods:** Sixty patients with mild-to-moderate depression (according to ICD-10 diagnostic criteria for mixed anxiety and depression disorder, F41.2) were included in an 8-week open label study. Thirty participants received either SSRI antidepressants with PLANTARUM at a dose of $1.0 \times 10^9$ CFU once per day. Thirty patients received SSRI antidepressants only without probiotics intake. The severity of depressive symptoms was assessed using Hamilton Depressive Rating Scale (HDRS) and Patient Health Questionnaire (PHQ-9).
**Results:** After 8 weeks intervention, a clinically significant reduction of HDRS total score (from 45,6±6,1 to 22,5±3,7) was detected in patients with mild-to-moderate depression who received SSRI antidepressants and PLANTARUM (p<0,001), compared with participants who didn't receive probiotics (p>0,05). A significant reduction of PHQ-9 total score (from 19,3±2,9 to 9,0±1,9) was identified in patients with mild-to-moderate depression who received SSRI antidepressants and PLANTARUM (p<0,05). However, the participants received SSRI antidepressant only didn't meet a clinically significant reduction depressive symptoms (p>0,05) by PHQ-9 scale.
**Conclusions:** The combination use of SSRI antidepressants and probiotic supplement PLANTARUM significantly reduced the depressive symptoms.

**Disclosure of Interest:** None Declared

## EPP0993

## MicroRNA Regulates Early-Life Stress–Induced Depressive Behavior via Serotonin Signaling in a Sex-Dependent Manner

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**Introduction:** The underlying neurobiology of early-life stress (ELS)-induced major depressive disorder (MDD) is not clearly understood. miRNAs, a subclass of noncoding RNAs, are estimated to regulate 20-90% of genes in the genome. Previous studies identify differences in miRNA expression following MDD and ELS, but there is limited research on a direct link between changes in serotonin signaling and miRNAs in response to ELS.
**Objectives:** In this study, we used MS and environmental enrichment to study serotonin signaling in the PFC and its regulation by miRNAs. Because women are more likely to develop MDD, but there is no strong evidence of sex differences in the experience of ELS, we were interested to test for sex differences. We hypothesized that genes in the serotonin signaling pathway would be altered by ELS and potentially recovered by enrichment.
**Methods:** We used maternal separation (MS) as a rodent model of ELS and tested whether microRNAs (miRNAs) target serotonin genes to regulate ELS-induced depression-like behavior and whether this effect is sex dependent. We also examined whether environmental enrichment prevents susceptibility to depression- and anxiety-like behavior following MS and whether enrichment effects are mediated through serotonin genes and their corresponding miRNAs.
**Results:** MS decreased sucrose preference, which was reversed by enrichment. Males also exhibited greater changes in forced swim climbing and escape latency tests only following enrichment. *Slc6a4* and *Htr1a* were upregulated in the frontal cortex following MS. In male MS rats, enrichment slightly reversed *Htr1a* expression to levels similar to control rats. miR-200a-3p and miR-322-5p, which target *SLC6A4*, were decreased by MS, but not significantly. An *HTR1A*-targeting miRNA, miR-320-5p, was also downregulated by MS and showed slight reversal by enrichment in male animals. miR-320-5p targeting of *Htr1a* was validated in vitro using SHSY neuroblastoma cell lines.
**Conclusions:** Altogether, this study implicates miRNA interaction with the serotonin pathway in ELS-induced susceptibility to depression-related reward deficits. Furthermore, because of its recovery by enrichment in males, miR-320 may represent a viable sex-specific target for reward-related deficits in major depressive disorder.

**Disclosure of Interest:** None Declared