On behalf of the Scientific Committee, we congratulate Dr. Laurent Naudon from CNRS, France for his award for Poster Presentation during **Targeting Microbiota World Congress** which was held in Institut Pasteur, Paris.

Dr. Laurent Naudon has presented a Poster about "**Overproduction of indole by gut microbiota increases anxiety and depressive-like behaviours in rats**
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According Dr. Laurent Neudon: "The gut microbiota ecosystem is in a dynamic balance throughout life. A disturbance of this balance can cause a change in the profile of metabolites produced by this ecosystem. Some of these metabolites are questioned to be involved in the pathophysiology of brain disorders, including mood disorders. Among them, indole is the product of the transformation of tryptophan by the enzyme tryptophanase (EC 4.1.99.1), encoded by several bacterial species of the gut microbiota. The genes encoding for tryptophanase (TnaA) were isolated from the human metagenomic catalog (3.3 M) by using a bioinformatic pipeline developed in our laboratory. Analysis of the distribution of the isolated genes from the human gut microbiota revealed that they are harboured by Bacteroides,

Clostridium and Roseburia.

This study aims to investigate whether an overproduction of indole by the gut microbiota can alter performance in behavioural tasks in rats, including memory, anxiety and depressive-like behaviours. For this purpose, we used a model of gnotobiotic F344 male adult rats colonized at birth with a wild-type strain of Escherichia coli, which naturally produces indole [I+ rats], or with its knock-out mutant for the tryptophanase gene, which cannot produce indole [I- rats]. We checked the absence of indole in the gut of I- rats, while indole concentration reached around 100 nmol/g dry matter in the feces of I+ rats, i.e. four times as much as in conventional rats. Furthermore, indole was absorbed through the gut mucosa as ascertained by the presence of its major detoxification metabolite, indoxylsulfate, in the urine of I+ rats. I+ rats displayed greater anxiety-like behaviours than their I- counterparts in several anxiety tests (elevated plus maze, open-field and novelty task). This was accompanied by a greater depressive-like behaviour in the tail suspension test. In both groups, memory performances were similar in the novel object recognition task. Our study demonstrates that a difference in indole production by the gut microbiota leads to behavioural differences in rats. The hypothetical routes whereby indole affects the brain still remain to be established. However, the present data strongly encourage considering the metabolites produced by the gut microbiota as potential actors in the emergence, maintaining and therapy of brain disorders."

For more information about Targeting Microbiota 2014: www.microbiota-site.com