

Poster presentation

VARIABILITY OF GUT AND LUNG MICROBIOTA IN RAT STRAINS
KNOWN TO DIFFER IN REACTIVITY TO IMMUNE STIMULY

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The gut microbiome is very important for hosts' proper essential functions, as microbiota influence both near and distant organs and disruption at any level of this complex relation can be underlying cause for many diseases. Both intestinal bacterial population and their metabolic products are involved in immune system development, activity and maintenance of immune homeostasis. Previous findings revealed differences in immune reactivity in Albino Oxford (AO) and Dark Agouti (DA) rat strains in various diseases models (such as experimental autoimmune encephalomyelitis, rheumatoid arthritis, contact hypersensitivity reaction, pulmonary aspergillosis etc.), and in response to xenobiotics such as cadmium, warfarin, etc.

The aim of present study was to investigate microbial composition of gut (duodenum, jejunum, coecum and colon) and lungs of AO and DA rats using DGGE method. Although similar number of bacterial species were noted in both tissue and lumen of duodenum, bacterial composition differ between these two strains (solely 76.2% and 44.4% species were common in both strains tissue and lumen, respectively), while greater variability was noted in DA rats. Similar results were noted in jejunum. In contrast to duodenum and jejunum, higher number of bacterial species were detected in coecum (content) and colon (tissue and content) of AO rats. Around 50% of detected bacteria were present in both gut segments of both strains. Analysis of DGGE bands obtained from lung tissue revealed similar number of bacteria in both strains, but solely 54.5% were common. Further investigations will be directed to identification of bacterial species and try to connect observed differences in microbial composition with different immune reactivity in AO and DA rats.

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