LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

MAX VON PETTENKOFER-INSTITUT
LEHRSTUHL MEDIZINISCHE MIKROBIOLOGIE UND KRANKENHAUSHYGIENE

The Max von Pettenkofer Institute

Microbiology Seminar Series

Date: **Wednesday, September 18**

Time: **5.00 pm (sharp)**

Location: **Lecture Hall MvPI (3rd floor)**

Speaker: **Prof. Dr. Thomas Borén**

Dept. of Medical Biochemistry

and Biophysics, Umeå University

Sweden

Title: Natural attachment-blocking antibodies and vaccine in protection against gastric disease and cancer

Most of the world-population carry Helicobacter pylori. Fortunately, the majority of individuals experience little or no symptoms. We have found a protective mechanism where chronic mucosal inflammation can be reduced by broadly blocking antibodies These antibodies that are present in most H. pylori carriers and reduce the attachment of H. pylori in the gastric mucosa. Of relevance for gastric disease, we found that patients with duodenal ulcer disease (DU) or gastric cancer have significantly lower levels of such blocking antibodies. To test for possibilities to elicit a protective immune response, we found; 1) that challenge infections with H. pylori induced blocking antibodies in human volunteers and in rhesus macaques; 2) vaccination induced blocking antibodies to the critically necessary protective level/titers in rhesus macaques; 3) vaccination in a mouse model induced blocking antibodies; 4) the vaccination reduced gastric mucosal inflammation and fully protected the mice from gastric cancer caused by H. pylori. Our new results suggest that the human immune response with blocking antibodies target an Achilles heel for the immune evasion strategy of H. pylori. The results show that the vaccination induced blocking antibodies reduce H. pylori adherence, reduce gastric inflammation, and reduce the risk for severe gastric disease and cancer.

Host: Doc@MvPI graduate program and Prof. Christine Josenhans

Medical course leader: Prof. Dr. med. Sebastian Suerbaum
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