The macrophage in Whipple's disease

Summary / Zusammenfassung

Whipple's disease is a rare, chronic and systemic infectious disease of virtually every part of the body, most prominently involving the gut, the joints, heart valves and the brain. The hallmark is the presence of diastase-resistant PAS positive bacteria inside macrophages. The bacterium called Tropheryma whipplei (TW) only grows in tissue culture, and only recently has its genome been sequenced. Our group propagated TW in vitro in human monocytes/macrophages deactivated with Interleukin-4, mimicking the unknown but postulated immune defect in patients with Whipple's disease.

The aim of this project is to further characterise this postulated immune defect in macrophages from patients with Whipple's disease.

After informed consent is obtained from each individual patient (study EK-738, University Hospital Zürich), RNA will be isolated from blood-derived monocytes from each patient. The transcriptome profile of the monocytes from individual patients will be analysed on microarray chips with probes for approx. 40000 human genes (Agilent). Regulation of genes will be studied in comparison to the transcriptome profile of monocytes from healthy human individuals. Furthermore, the effect of the deactivating cytokine IL-4 will be investigated.

Publications / Publikationen

2: Schaffner A, Schneemann M. Whipple's disease--from enigma to genomics.
3: Zinkernagel AS, Gmür R, Fenner L, Schaffner A, Schoedon G, Schneemann M. Marginal and subgingival plaque--a natural habitat of Tropheryma whipplei?
4: Schneemann M, Schoedon G. Whipple's DNA is not Whipple's disease.

Keywords / Suchbegriffe

Whipple's disease, Tropheryma whipplei, monocytes/macrophages, macrophage deactivation, IL-4, gene expression profiling
Project Leadership and Contacts / Projektleitung und Kontakte
PD Dr. Markus Schneemann, MD (Project Leader) markus.schneemann@usz.ch

Funding Source(s) / Unterstützt durch
Others

In Collaboration with / In Zusammenarbeit mit
Functional Genomics Center Zurich Switzerland
ETH and University of Zurich

Duration of Project / Projektdauer
Apr 2007 to Sep 2011