A149 **EARLY DIFFERENTIATED PLASMA CELLS EXPRESSING CXCR3 ARE ATTRACTED TO INFLAMED KIDNEYS IN LUPUS**

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Background and objectives Antibody-secreting CD138+ plasma cells are detected in the kidneys of NZB/W lupus mice where they are presumably involved in the mechanisms leading to critical renal dysfunction. Objectives of this study were to dissect the differentiation pathway of plasma cells in NZB/W mice and to understand the involvement of the identified cell intermediates in the pathogenic inflammation process in lupus.

Materials and methods CD138+ cell subpopulations were identified in the spleen of NZB/W mice and further isolated by FACS. They were additionally characterised by electronic microscopy and quantitative PCR techniques. Their proliferative capacity was measured in vivo and ex vivo upon BrdU and tritiated thymidine incorporation. Antibody production was detected by ELISPOT, ELISA and intracellular flow cytometry stainings. Migrating CD138+ cells were visualised in the kidneys of diseased NZB/W mice by immunohistochemistry techniques.

Results We identified and extensively characterised three cell intermediates in the differentiation pathway from B cells to plasma cells, according to their B220/CD138/MHC II expression levels. We showed that these subpopulations harbored inversely correlated proliferation and antibody secretion capacities. Very interestingly, we evidenced that the inflammation-related CXCR3 chemokine receptor is preferentially expressed by early differentiated plasma cells and that these cells secrete IgG rather than IgM. Moreover, these potentially pathogenic cells are able to migrate into the inflammatory areas of NZB/W kidneys.

Conclusions Early differentiated CD138 MHCII+ rather than terminally differentiated CD138+MHCII- plasma cells are involved in the renal inflammatory injury in lupus, due to CXCR3 expression and IgG secretion.