

# Characterization of tissue-resident and infiltrating macrophages in the resolution of inflammation

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Macrophages are important regulators of immune responses against pathogens such as bacteria or fungi. To fulfill their crucial function, tissue-resident macrophages, which can react directly to pathogenic stimuli, are supported by monocytes, which are recruited to the site of inflammation, where they differentiate into macrophages. Macrophages then contribute to the establishment of a pro-inflammatory environment, but also coordinate the subsequent resolution of inflammation, to prevent damage due to uncontrolled, chronic inflammatory conditions. Despite the well-characterized plasticity of this cell type, the distinct role of resident vs. infiltrating macrophages in the resolution of inflammation is only poorly characterized. Thus, we aimed to decipher the transcriptional responses of resident and infiltrating macrophages in the zymosan-induced peritonitis model in vivo. To this end, we separated peritoneum-derived, resident macrophages and monocyte-derived, infiltrating macrophages by FACS-sorting and assessed transcriptomic changes by mRNA-sequencing during the course of inflammation and its resolution. Of note, while infiltrating macrophages were characterized by constantly high MHCII levels, resident macrophages appeared to change from an MHCII-negative to an MHCII-expressing phenotype.  
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Keywords : resolution of inflammation; resident macrophages; infiltrating macrophages;

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