Dokumenttyp: journal article

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Titel des Beitrags: Tissue-specific induction of ADAMTS2 in monocytes and macrophages by glucocorticoids.

Abstract: The regulated expression of ADAMTS2 (a disintegrin and metalloproteinase with thrombospondin motifs), a secreted metalloproteinase involved in the processing of procollagen to collagen, was studied in peripheral blood mononuclear cells (PBMC). Stimulation with glucocorticoids (GC) resulted in a pronounced dose- and time-dependent increase of ADAMTS2 mRNA levels in PBMC. The increase of ADAMTS2 expression was specific for CD14++ monocytes (440-fold) and alveolar macrophages (200-fold), whereas CD3+ (T lymphocytes), phytohemagglutinin-activated CD3+ (T lymphocytes), and CD19+ (B lymphocytes) showed no significant changes in ADAMTS2 mRNA after GC treatment. Treatment of monocyte-derived macrophages (MDM) with GC also resulted in an increase of ADAMTS2 protein in the culture tissue media. Using the GC analog RU486, GC-mediated induction of ADAMTS2 mRNA was blocked, implicating that GC acts specifically via the GC-receptor. In agreement with findings in blood monocytes, cell lines of the monocytic lineage (MM6, THP-1) showed significant GC-induced significant increases in ADAMTS2 mRNA, while in epithelial cells (A549, Calu-3, Colo320, BT-20) and fibroblast (MRC-5, WI-38, and two NHDF-c cell types from adult cheek and upper arm), they showed no or little responsiveness to GC. As
macrophages have important functions in immune defense and tissue homeostasis, these findings suggest that GC-mediated specific induction of ADAMTS2 in these cells may play a crucial role in the resolution of inflammation and wound repair.