Production of superoxide anion, nitric oxide and tumor necrosis factor-α by cultured murine peritoneal leukocytes is inhibited by taurine chloramine

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Taurine Chloramine (Tau-Cl) inhibits production of nitric oxide (NO) and tumor necrosis factor-alpha (TNF-α) in activated peritoneal macrophages, similar to that previously reported for activated RAW 264.7 cells. In addition, the effect of Tau-Cl and taurine on superoxide anion (O_2^-) production in murine peritoneal exudate polymorphonuclear leukocytes (PMN) was examined. Tau-Cl inhibited O_2^- production in a manner that was dose-dependent and reversible. Taurine also inhibited O_2^- production by stimulated PMN, but at higher concentrations and to a lesser extent than Tau-Cl. The effects of taurine on O_2^- production was attributed to the in vitro formation of Tau-Cl catalyzed by PMN associated halide-dependent myeloperoxidase. In contrast, production of NO and TNF-α by activated peritoneal exudate macrophages was inhibited by Tau-Cl while taurine was without effect. These data lend support to the notion that Tau-Cl may participate in the inflammatory responses by modulating production of inflammatory mediators.