**Oxyresveratrol and resveratrol reduce lead-induced IL-6 and IL-8 secretion from human astrocytes.**

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**Introduction.** Lead (Pb) accumulation in the nervous system potentiates the risk of many neurological defects. Pb induces the activation of astrocytes and the release of pro-inflammatory mediators from astrocytes. Resveratrol and its hydroxylated derivative, oxyresveratrol, can decrease the expression of pro-inflammatory cytokines. The present study hypothesized that oxyresveratrol and resveratrol can reduce Pb-induced pro-inflammatory cytokines secretion from

U-87 MG human astrocytoma cells.

**Aims.** Our first objective is to determine the effect of Pb on cytokine secretion in U-87 MG cells. Next, we aim to determine the effects of oxyresveratrol and resveratrol on Pb-induced cytokine levels in U-87 MG cells and their underlying mechanisms.

**Methods.** Cell viability and cytokine production were measured at 24 hours by MTT and ELISA, respectively. The signaling protein responsible for cytokine production was detected at 30 minutes by Western blot.

**Results.** Pb up to 500 μM and co-treatment of Pb with oxyresveratrol and resveratrol at 25 and 50 μM did not decrease cell viability. Pb at 50 and 500 μM increased secretion of IL-6 and IL-8. Oxyresveratrol and resveratrol at 25 and 50 μM reduced Pb-induced secretion of IL-6 and IL-8**.** Oxyresveratrol and resveratrol inhibited the phosphorylation of ERK1/2and JNK proteins.

**Discussion.** Our results show that both oxyresveratrol and resveratrol could reduce Pb-induced inflammation from human astrocytes. Thus, both compounds could potentially be developed for Pb-related inflammation in the central nervous system.