



POSTER PRESENTATION

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# Valproic acid suppresses interleukin-1 $\beta$ -induced microsomal prostaglandin E2 Synthase-1 expression in chondrocytes

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## Introduction

Microsomal prostaglandin E2 Synthase (mPGES)-1 catalyzes the terminal step in the biosynthesis of PGE<sub>2</sub>. Early growth response factor-1 (Egr-1) is a key transcription factor in the regulation of mPGES-1. In the present study we examined the effects of valproic acid (VA), a histone deacetylase (HDAC) inhibitor, on interleukin (IL)-1 $\beta$ -induced mPGES-1-expression in human chondrocytes.

## Methods

Chondrocytes were stimulated with IL-1 in the absence or presence of VA, and the level of mPGES-1 protein and mRNA expression were evaluated using Western blotting and real-time reverse-transcription polymerase chain reaction, respectively. The mPGES-1 promoter activity was analyzed in transient transfection experiments. Egr-1 recruitment to the mPGES-1 promoter were evaluated using chromatin immunoprecipitation (ChIP) assays.

## Results

VA dose-dependently suppressed IL-1 $\beta$ -induced mPGES-1 protein and mRNA expression as well as its promoter activation. Treatment with VA did not alter IL-1-induced Egr-1 expression, nor its recruitment to the mPGES-1 promoter, but prevented its transcriptional activity.

## Conclusion

Our study demonstrates that VA inhibits IL-1-induced mPGES-1 expression in chondrocytes. The suppressive effect of VA was not due to reduced expression or recruitment of Egr-1 to the mPGES-1 promoter.

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