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Basic Study

Induction of **CXC chemokines** in **human mesenchymal stem cells** by stimulation with secreted frizzled-related proteins through non-canonical Wnt signaling

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David S Bischoff, Jian-hua Zhu, Nalini S Makhijani, Dean T Yamaguchi

Abstract

AIM: To investigate the effect of secreted frizzled-related proteins (sFRPs) on CXC chemokine expression in human mesenchymal stem cells

METHODS: CXC chemokines such as CXCL5 and CXCL8 are induced in human mesenchymal stem cells (hMSCs) during differentiation with osteogenic differentiation medium (OGM) and may be involved in angiogenic stimulation during bone repair. hMSCs were treated with conditioned medium (CM) from L-cells expressing non-canonical Wnt5a protein, or with control CM from wild type L-cells, or directly with secreted frizzled-related proteins (sFRPs) for up to 10 days in culture. mRNA expression levels of both CXCL5 and CXCL8 were quantitated by real-time RT-PCR and secreted protein levels of these proteins determined by ELISA. Dose- (0-500 ng/ml) and time-response curves were generated for treatment with sFRP1. Signal transduction

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