

New regulatory factor identified in bone formation

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Researchers report the identification of a novel transcription factor that helps regulate the differentiation of mesenchymal stem cells (MSCs) into bone in mice. Bone cell differentiation is still poorly understood, and MSCs offer a promising source of stem cells for regenerative medicine applications. The new transcription factor, called Osteoblast Inducer (Obl)-1, is described in an article published in *Stem Cells and Development*.

The article entitled "Identification of a Novel Transcription Factor Required for Osteogenic Differentiation of Mesenchymal Stem Cells" was

coauthored by Francesca Querques and Anna D'Agostino, CEINGE-Biotecnologie Avanzate (Naples, Italy), Università degli Studi di Napoli "Federico II" (Naples), and SEMM-European School for Molecular Medicine (Naples) and a team of researchers from these institutions and CRG-Centre for Genomic Regulation (Barcelona, Spain). The researchers identified Obl-1 in a screen of mouse MSCs and went on to show that it acts, at least in part, by stimulating the BMP signaling pathway, which controls the expression of Runx2.

"Lucio Pastore and colleagues report for the first time that a novel transcription factor they named Osteoblast Inducer-1 regulates osteogenic differentiation acting upstream of Runx2. In their elegant paper they used both knockdown and overexpression experiments in both a multipotent murine bone marrow cell line as well as primary murine mesenchymal [stem cells](#)," says Editor-in-Chief Graham C. Parker, Ph.D., The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Detroit, MI.

More information: Francesca Querques et al, Identification of a Novel Transcription Factor Required for Osteogenic Differentiation of Mesenchymal Stem Cells, *Stem Cells and Development* (2019). [DOI: 10.1089/scd.2018.0152](https://doi.org/10.1089/scd.2018.0152)

Provided by Mary Ann Liebert, Inc

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