

## **Osteoblast Exposure to Chordoma Exosomes Alters the Tumor Microenvironment**

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### **Body**

Chordomas are extremely rare tumors of the sarcoma group; nonetheless, they are the most common tumor of the sacral and cervical spine. Within the tumor microenvironment, exosomes – secreted vesicles with multifaceted activities – are involved in tumor communication and material exchange. Our prior novel investigation showed chordoma exposure to chordoma exosomes resulted in different protein expression profiles for proteases, cytokines, and chemokines compared to control. We are now investigating how chordoma exosomes influence osteoblasts, the normal cells within the tumor microenvironment. We believe chordoma exosome-exposed osteoblasts will experience alterations to signaling, metabolism proliferation, and secretion of modifying material into the extracellular matrix.

ARF-8 chordoma cells were grown in DMEM+10% XO-Free (exosome-depleted) FBS. Conditioned medium was subjected to differential centrifugation, ultrafiltration, and ultracentrifugation to acquire ARF-8 exosomes. Purified ARF-8 exosomes were applied to osteoblasts (in triplicate) while control osteoblasts remained untreated. Both control and treated triplicates underwent proteomic and signaling pathway analyses.

Osteoblast exposure to chordoma exosomes resulted in contrastingly opposite variations and concentrations of proteins between the control and the XO-exposed osteoblasts. Signaling pathway analysis demonstrated notable remodeling of epithelial adherens junctions.

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