while up-regulating all other genes, suggesting a possible protective effect. Caspase-3, a key signaling molecule in apoptosis, was significantly up-regulated (12x FS) under Co alone. While previous studies showed increased apoptosis due to mechanical injury, we have now shown a direct link between chondrocyte apoptosis in normal cartilage due to co-culture with excised joint capsule.

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MICRORNA ARE DIFFERENTIALLY EXPRESSED IN OSTEARTHRITIC TISSUE  
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Purpose: MicroRNA (miRNA) are short, non-coding RNA molecules, endogenously produced in mammalian cells and are believed to mediate protein translation. At present, around 300 human miRNA have been identified with each miRNA hypothetically targeting the translation of multiple genes. Previous studies have demonstrated both differential tissue biodistribution and disease-specific expression of miRNA suggesting that miRNA regulate important physiological and pathological processes. However, currently little research has been undertaken to identify miRNA associated with osteoarthritis (OA) or to determine the role of miRNA in the progression of this disease.

Methods: To investigate the role of miRNA in OA we profiled the expression of 157 human miRNA (Applied biosystems early access panel) in human cartilage and bone tissue from both normal (control) donors and OA donors. MiRNA were extracted from cartilage and bone tissue using Trizol and the miRNA expression quantified by 2-step Taqman PCR utilising RT stem loop primers (Applied Biosystems) for first strand synthesis, and normalised to 18S.

Results: In total, 28 miRNA were identified with differential expression between diseased and normal cartilage tissue. The most notable changes were miR-9, miR-25 and miR-98, which were upregulated by 8-, 8- and 23-fold respectively, and miR-107, miR-146 and miR-149, which were downregulated by 4-, 4- and 27-fold respectively. Furthermore, in bone miR-27b, miR34c and miR-122a were upregulated by 5-, 21- and 9-fold respectively.

Conclusions: Our results show that miRNA are differentially expressed in both OA cartilage and OA bone. Modulating the expression of these differentially expressed miRNA may help to understand the role of these miRNA in OA and could lead to identifying novel targets for therapeutic intervention.

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GLUCOSE UPTAKE AND GLUCOSE TRANSPORTER-1 EXPRESSION IN HUMAN CHONDROCYTES ARE DIFFERENTIALLY REGULATED BY HIGH AND LOW GLUCOSE CONCENTRATIONS  
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Purpose: Chondrocytes utilize glucose both for energy production and plastic functions, including the synthesis of matrix components. Increasing evidence suggests that alterations in ambient glucose concentrations outside of normoglycemic ranges, as occurs in poorly controlled diabetes mellitus, can significantly impair chondrocyte anabolic functions. This is in agreement with recent studies showing a correlation between metabolic dysfunc-

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INCREASE IN THE GENE EXPRESSION OF MMP 13 AND BMP 2 IN HUMAN ARTHROITIC CARTILAGE CELLS AFTER THE TREATMENT WITH 5 AZA DEOXY CYTIDINE  
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Purpose: In Osteoarthritris the matrix metalloproteinases (MMPs) are important for collagen degradation and are suspects in the development of this disease. Especially MMP-13 is present in cartilage and thought to be one of the major collagen proteases. BMP-2 (bone morphogenic protein 2) is an impor-