

CHI3L1 and lubricin expression in osteoarthritic cartilage

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Osteoarthritis (OA) is the most common human arthritis characterized by degeneration of articular cartilage. Several studies reported that levels of human cartilage glycoprotein 39 (GP-39) are known as a potential marker for the activation of chondrocytes and the progression of OA, whereas lubricin appears to be chondroprotective. The aim of this study was to investigate the co-expression and co-localization of CHI3L1 and lubricin in normal and osteoarthritic rat articular cartilage to correlate their modified expression to a specific grade of OA. Samples of normal and osteoarthritic rat articular cartilage were analyzed by the Kellgren-Lawrence OA severity scores, the Kraus' modified Mankin score and the Histopathology OARSI system for histomorphometric evaluations, and through CHI3L1 and lubricin gene expression, immunohistochemistry and double immuno-staining analysis. The immunoexpression and the mRNA levels of lubricin increased in normal cartilage and decreased in OA cartilage. By contrast, the immunoexpression and the mRNA levels of CHI3L1 increased in OA cartilage and decreased in normal cartilage. Our findings are consistent with reports suggesting that these two glycoproteins are functionally associated with the development of OA and in particular with grade 2/3 of OA evidenced in histomorphometric analysis of our samples, so that they could have a role in the daily clinical practice in staging the severity and progression of the disease.

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References

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Keywords

Lubricin; CHI3L1; osteoarthritis; anterior cruciate ligament transection (ACLT); immunohistochemistry; mRNA.