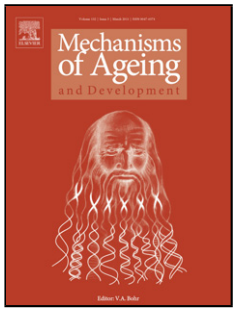

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Studying microRNAs in osteoarthritis: critical overview of different analytical approaches

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Highlights

- This review highlights the involvement of microRNAs in osteoarthritis
- Emphasis is given to summarising analyses of microRNAs' role in processes that contribute to the development of this particularly common age-related pathology
- The experimental approaches so far adopted are categorised and presented in a critical way
- The diagnostic and/or therapeutic potential of microRNAs for osteoarthritis is discussed

Abstract

MicroRNAs are small non-coding RNA species with the ability to post-transcriptionally control the expression of multiple genes, that have gained substantial interest because of their expression alterations that accompanies aging and possible age-related pathologies. Given the constant rise in the number of patients suffering from age-related diseases -due to the increase of the aging population in the western world- the exploration of the role of specific microRNAs in the etiopathology of these diseases is expected to have great impact. Degenerative arthritis or osteoarthritis is of the most common age-related diseases and possible the one with the most limited therapeutic options. In this review therefore, we highlight recent advances considering the implication of microRNAs in processes known to contribute to the development of this disease. We also critically present the analytical approaches adopted so far, in an attempt to facilitate the acknowledgment of the necessary experimental tactic that will lead to the establishment of microRNAs as biomarkers and/or therapeutic agents for this age-related pathology.