

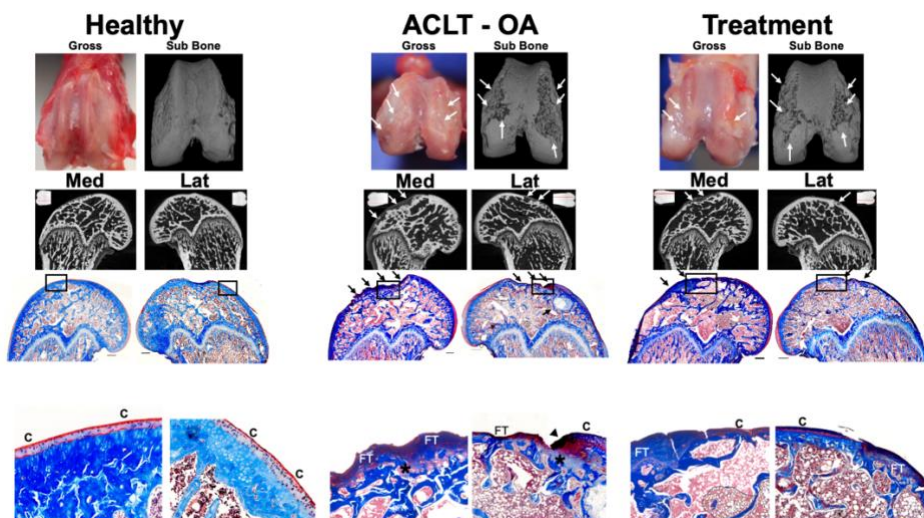
microRNA treatment for traumatic osteoarthritis

Inhibiting miRNAs to prevent and treat OA and other inflammatory diseases

Osteoarthritis (OA) is a debilitating degeneration of articulating joints in humans. The disease is driven by mechanical instability from traumatic injury or overuse and inflammatory signaling from the cells in local tissue environment. OA is characterized by cartilage degradation a result of chondrocyte apoptosis, and osteophyte or bone spur formation because of increased mechanical stimuli to the bone underlying the articulating joint. This phenotypic change results in overt joint pain and immobility reducing the quality of life for over 300 million people globally. microRNAs are a newer field of research that have shown specific regulation in healthy and disease states of tissues in the body. Regulating these microRNAs therefore could be a viable treatment method to alter disease state and prognosis.

The technology

VCU researchers have identified key microRNA signaling pathways that regulate cartilage degradation and developed a therapeutic regime to proactively prevent severe OA after traumatic injury and reduce the overall deleterious effects of cartilage degradation in an articulating joint. This method has been validated in a bilateral model of anterior cruciate ligament transection in rats.



Benefits

- » Prevention of osteoarthritis
- » Reduction in matrix degradation
- » Reduction in inflammatory signaling

Applications

- » Prevention of traumatic osteoarthritis
- » Inflammatory diseases of cartilage
- » Synovitis treatment
- » Rheumatoid arthritis treatment

Patent status:

Patent pending: U.S. and foreign rights are available.

License status:

This technology is available for licensing to industry for further development and commercialization.

Category:

Biomedical

VCU Tech #:

20-161

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