

**Hyaluronan as a therapeutic target in human diseases.**

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**Public Summary:**

Accumulation and turnover of extracellular matrix is a hallmark of tissue injury, repair and remodeling in human diseases. Hyaluronan is a major component of the extracellular matrix and plays an important role in regulating tissue injury and repair, and controlling disease outcomes. The function of hyaluronan depends on its size, location, and interactions with binding partners. While fragmented hyaluronan stimulates the expression of an array of genes by a variety of cell types regulating inflammatory responses and tissue repair, cell surface hyaluronan provides protection against tissue damage from the environment and promotes regeneration and repair. The interactions of hyaluronan and its binding proteins participate in the pathogenesis of many human diseases. Thus, targeting hyaluronan and its interactions with cells and proteins may provide new approaches to developing therapeutics for inflammatory and fibrosing diseases. This review focuses on the role of hyaluronan in biological and pathological processes, and as a potential therapeutic target in human diseases.

**Scientific Abstract:**

Accumulation and turnover of extracellular matrix is a hallmark of tissue injury, repair and remodeling in human diseases. Hyaluronan is a major component of the extracellular matrix and plays an important role in regulating tissue injury and repair, and controlling disease outcomes. The function of hyaluronan depends on its size, location, and interactions with binding partners. While fragmented hyaluronan stimulates the expression of an array of genes by a variety of cell types regulating inflammatory responses and tissue repair, cell surface hyaluronan provides protection against tissue damage from the environment and promotes regeneration and repair. The interactions of hyaluronan and its binding proteins participate in the pathogenesis of many human diseases. Thus, targeting hyaluronan and its interactions with cells and proteins may provide new approaches to developing therapeutics for inflammatory and fibrosing diseases. This review focuses on the role of hyaluronan in biological and pathological processes, and as a potential therapeutic target in human diseases.

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