Celastrol is a triterpene originally found in Trypterigium wilfordii that exhibits antioxidative, anticancer, anti-inflammatory, and anti-atherosclerotic activities. Celastrol attenuates renal damage by downregulating expression of TNF-α, IL-1β, MCP-1, and NF-κB in animal models of ischemic injury and diabetes. Celastrol also shows anti-atrophic benefit in muscle cells through induction of HSP70 and increases in Akt and ERK1/2 signaling. This compound inhibits LDL-induced oxidative stress in vitro and in vivo. Additionally, celastrol shows potential benefit as a treatment for arthritis, as it increases expression of Bax/Bcl-2 and induces cell cycle arrest and caspase-mediated apoptosis in rheumatoid synovial fibroblasts. Celastrol also acts as a competitive inhibitor of HSP90.

References