The ACAN gene provides instructions for making the aggrecan protein. Aggrecan is a type of protein known as a proteoglycan, which means it has several sugar molecules attached to it. It is the most abundant proteoglycan in cartilage, a tough, flexible tissue that makes up much of the skeleton during early development. Most cartilage is later converted to bone (a process called ossification), except for the cartilage that continues to cover and protect the ends of bones and is present in the nose, airways, and external ears.

Aggrecan attaches to the other components of cartilage, organizing the network of molecules that gives cartilage its strength. These interactions occur at a specific region of the aggrecan protein called the C-type lectin domain (CLD). Because of the attached sugars, aggrecan attracts water molecules and gives cartilage its gel-like structure. This feature enables the cartilage to resist compression, protecting bones and joints. Although its role is unclear, aggrecan affects bone development.