



CRC

for

Premium

Quality

Wool

Extracellular Matrix

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Dermal structure

- **Extracellular matrix (ECM)**
 - fibrous proteins embedded in hydrated gel
 - acts as scaffolding
 - regulatory functions
- **Connective tissue**
 - ECM plus cells

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Collagen

- **non-extensible**
- **very strong**
- **produced by fibroblasts**
- **contains hydroxyproline and hydroxylysine**
- **arranged in bundles**

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Elastin

- single strand, branch freely
- non-fibrillar and homogenous
- extensive network
- highly retractable, yellow
- lack of periodical structure
- composed of two regions
 - medulla (elastic)
 - cortex (non-elastic)

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Reticulin

- **anchoring fibrils**
- **associated with the basal membrane**
 - separates the dermis from the epidermis
- **branch freely, no bundles**
- **uneven thickness**
- **similar appearance to collagen**
 - carbohydrate linked to collagen
 - may provide template for extracellular aggregation of collagen fibrils

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Ground substance of the ECM

- **Proteoglycans**
 - core protein bearing a glycosaminoglycan side-chain
 - e.g. heparin sulphate
 - able to bind water to 1000 times its volume
- **contains blood metabolites**
 - ions, urea, sugars

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