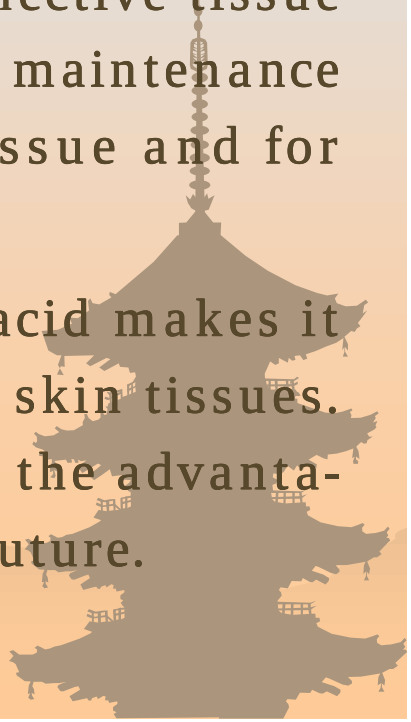
GENERAL INFORMATION ABOUT HYALURONIC ACID

- Hyaluronic acid(or Hyaluronan) is one of the acidic mucopoly-saccharides naturally existing in large quantities in vitreous humor, serum, chicken comb, shark skin, and whale cartilage.
- Hyaluronic acid is found with being combined with protein and chondroitin sulfate in the space between cells of connective tissue such as skin and it serves important functions for the maintenance of structure, moisture, lubricability and of the tissue and for protection against invasion of bacteria.
- The excellent water-holding capacity of hyaluronic acid makes it capable of retaining moisture in the eyes, joints, and skin tissues. It is also expected that a number of products utilizing the advantageous properties of hyaluronic acid will increase in the future.



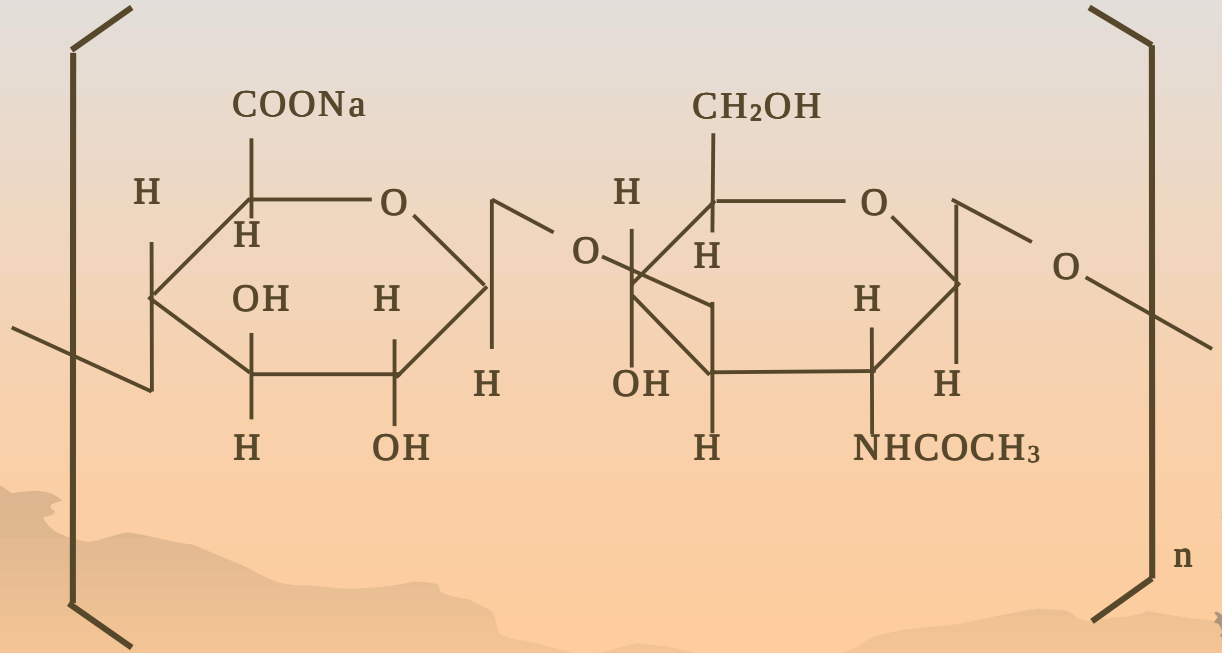
SODIUM HYALURONATE

- Since hyaluronic acid is unstable as acid form, it has been usually extracted and refined as sodium salt.
- Sodium hyaluronate has a high ability of retaining water and the solution of sodium hyaluronate is highly viscous.
- In pharmaceutical field, sodium hyaluronate has been utilized in ophthalmic medical device (used for surgery of cataract), drug for arthritis (injection), eye drops, topical uses, and so on.
- Furthermore, sodium hyaluronate has been studied for adopting to DDS (Drug Delivery System) with utilizing its characters.
- Our sodium hyaluronate is extracted and purified from hen comb, that is natural, thus, it is very suitable for living body.

SODIUM HYALURONATE

for Pharmaceutical Uses

The Structure of Sodium Hyaluronate



Q.P. Sodium Hyaluronate for Pharmaceutical Uses

● HYALURONSAN HA-AM;

Molecular weight : 600,000 to 1,200,000

(Intrinsic viscosity: 11.8 - 19.5 dl/g)

Detailed specifications are available. (Endo-toxin is not more than 2.0 EU/g)

⇒ HA-AM has been produced in compliance with c-GMP and viral inactivation/removal validation studies have been done.

Also, DMF (Drug Master File) has been filed in the US.

Storage: Store tightly sealed below 15ºC. (Avoid freezing)

Packaging: 200 g × 1

Q.P. Sodium Hyaluronate for Pharmaceutical Uses

● HYALURONSAN HA-QSE;

Molecular weight : 1,900,000 to 3,900,000

(Intrinsic viscosity: 30.0 - 55.0 dl/g)

Detailed specifications are available.

Storage: Store tightly sealed at 5±3ºC.

● HYALURONSAN HA-QA;

Drug excipient for topical pharmaceutical uses.

Molecular weight : 530,000 to 1,330,000

(Intrinsic viscosity: 10.5 - 21.5 dl/g)

Detailed specifications are available.

Safety: Acute Oral Toxicity --- LD_{50} (mice) more than 598mg/kg

LD_{50} (rats) more than 598mg/kg

Passed the all tests --- Guinea Pig Maximization Test,

Primary Skin Irritation, and Patch Test.