

## FACT SHEET

### PAPAYA (CARICA PAPAYA)

#### PRODUCT OVERVIEW

Papaya has Papain that is a proteolytic enzyme with strong exfoliating, antibacterial, and wound-healing properties. It smooths the skin, reduces dark spots from sun exposure, and has been widely used for treating skin ulcers and severe burn injuries.

#### Features and Kinetics

- Proteolytic, brightening
- Barrier & Hydration Modulation
- Pigment Regulation
- Cellular Renewal & Elasticity
- Anti-aging & Wrinkle reduction
- Anti-inflammatory Agent
- Anti-oxidant Agent

#### Mechanism of Action

1. Proteolytic & Renewal - Breaks peptide bonds to remove damaged keratinocytes, enhancing skin turnover and ingredient absorption (active at pH 5-7)
2. Antioxidant Defense - Scavenges ROS, boosts enzymatic antioxidants, and clears oxidized cells to reduce oxidative stress.
3. Anti-inflammatory & Repair - Suppresses inflammatory pathways, limits epidermal thickening, and promotes wound healing and barrier support.

#### Key Ingredients

- Papaya (Papain enzyme)

#### Storage conditions

- Must be stored at 2-8 °C; do not freeze (ice crystals denature the enzyme).
- Protect from direct sunlight (use opaque or amber containers).
- Solutions should contain stabilizers (e.g., glycerol, cysteine, EDTA) and preservatives.

#### Applications:

papain is applied in exfoliation, wound healing, acne control, wrinkle reduction, melasma treatment, and skin hydration products.