

BIOTECH EDGE

Papain is a precision **enzymatic exfoliant obtained through controlled biotechnology from the Carica papaya fruit**. Known for its ability to **gently dissolve corneodesmosomes**, Papain renews the skin without abrasion, offering a refined, even texture while maintaining barrier integrity. Its ability to remove dull, damaged surface proteins makes it an advanced alternative to physical scrubs and harsh acids, delivering smoother, brighter skin through biomimetic enzymatic action.



Papain is a cysteine protease enzyme that selectively breaks down denatured keratin, facilitating a controlled enzymatic exfoliation process. Unlike aggressive exfoliants that strip the skin, Papain respects the lipid barrier and enhances cellular turnover in a biologically harmonious way. It promotes clarity, softness, and uniform tone, making it a preferred active in sensitive skin resurfacing formulations, brightening systems, and enzymatic peels.

PRODUCT DETAILS

INCI name:	Recommended Dosage:	Appearance:	Activity:
Papain	0.1% – 1.0%	Off-white to light beige powder, water soluble	2000 USP

APPLICATIONS :



Enzymatic exfoliating cleansers



Resurfacing mask



Pigmentation control systems



Brightening serums



Gentle peel formulations



Sensitive-skin renewal products

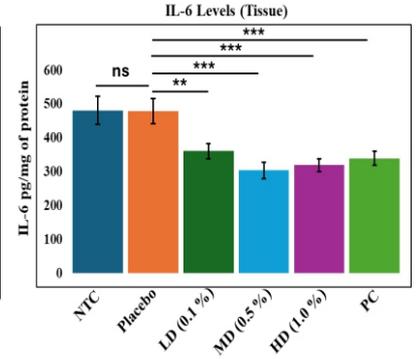
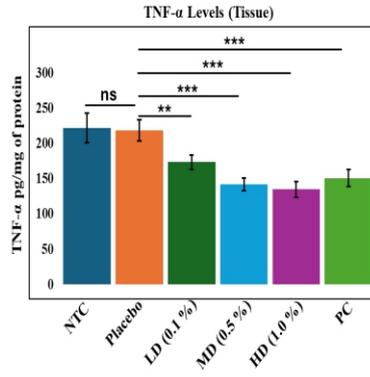
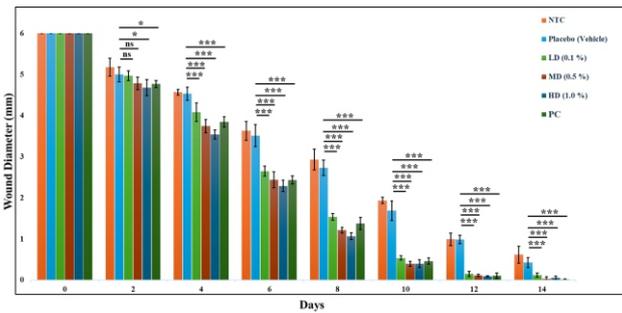
KEY FEATURES :

- High enzymatic activity for efficient keratin digestion
- Barrel-friendly, mild resurfacing suitable for sensitive skin
- Supports smoother skin texture without dryness
- Derived through controlled biotech purification for stability and safety
- Improves delivery and absorption of other bioactives

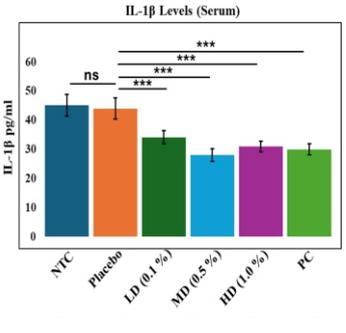
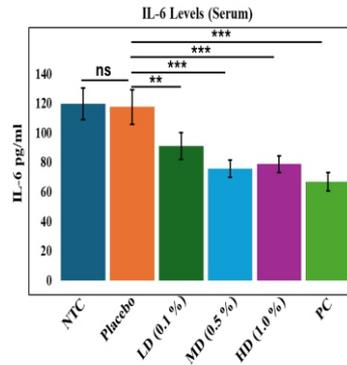
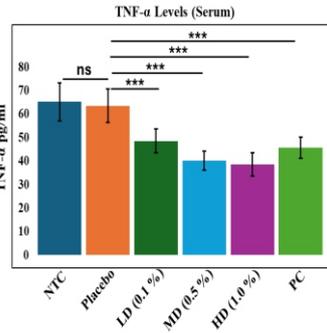
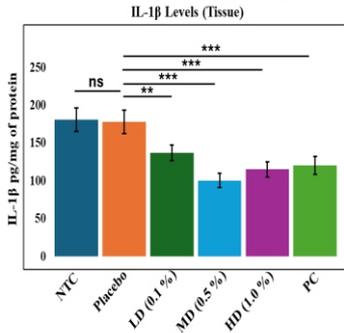
WHAT IT BRINGS TO YOUR FORMULATION :

- Non-acid, non-abrasive resurfacing mechanism
- Enhances skin radiance and visible smoothness
- Supports barrier comfort during exfoliation
- Improves penetration of complementary actives (niacinamide, HA, peptides, AHAs, brightening agents)
- Compatible with a wide range of skincare formats (cleansers, serums, masks, peels)

EFFICACY STUDIES :



On all the observation days, each treated groups displayed significant wound recovery compared to NTC. Day 4 onwards, all the topically applied METPAPA® treated groups displayed highly significant wound contraction compared to the Placebo control. Within the treated groups, Group 4 (MD – 0.5% w/w METPAPA®) evidently displayed better wound contraction activity compared to all other treated group and control. On 12th day, all the treated groups displayed near complete wound recovery whereas Placebo and NTC group possessed significant wound scar even at 14th day



Results: All the treated groups displayed significantly lower tissue and serum specific inflammatory profiles compared to NTC. Although, placebo group displayed marginally lower values compared to NTC, but the difference was non-significant. Among all the treated groups, Group 4 (MD – 0.5% w/w METPAPA®) displayed better reduction in tissue and serum specific inflammatory markers suggesting better repair efficacy at tissue and cellular level.

CLINICALLY PROVEN BENEFITS :

- Accelerates wound healing
- Promotes near complete recovery of skin
- Reduces visible scarring versus placebo and NTC
- Lowers tissue and serum inflammation significantly
- Delivers superior repair efficacy at 0.5% concentration
- Provides gentle enzymatic exfoliation for smoother, renewed skin

CERTIFICATION:

