

BioReNuva®

ANTI-INFLAMMATORY PROPERTIES OF SOPHOROLIPIDS

Sophorolipids are a unique class of biosurfactants derived from renewable resources, celebrated for their outstanding performance, natural origin, and biological efficacy. These remarkable compounds are produced through the fermentation and have gained significant attention in the cosmetic industry for their multifunctional properties, improvement of skin conditions and sustainability.

BioReNuva Sophorolipids (INCI: Glycolipids)

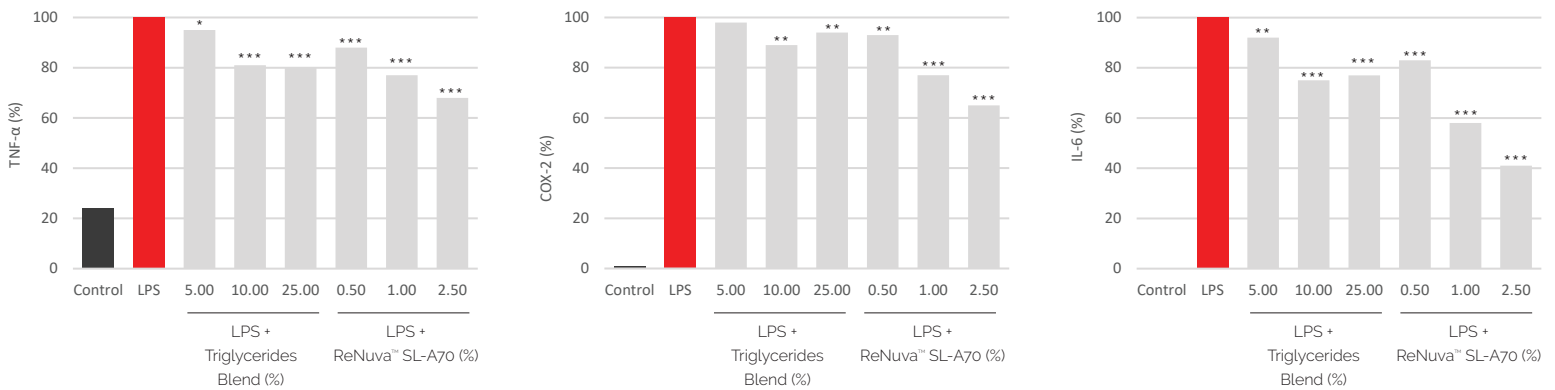
ReNuva™ SL-A70 (70% Acid and 30% Lactone)

ReNuva™ SL-L70 (30% Acid and 70% Lactone)



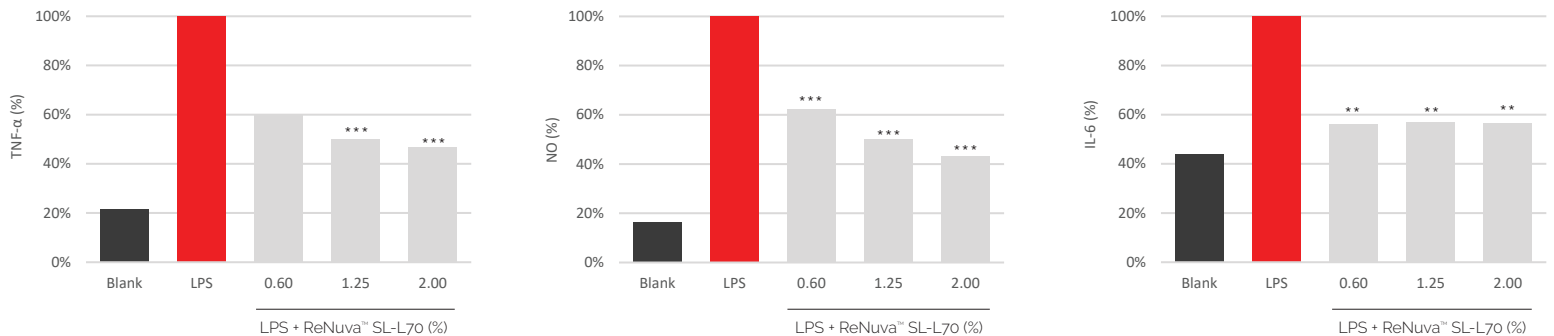
Study 1

Anti-inflammatory activity of ReNuva™ SL-A70 at various concentration under stimulation of LPS.



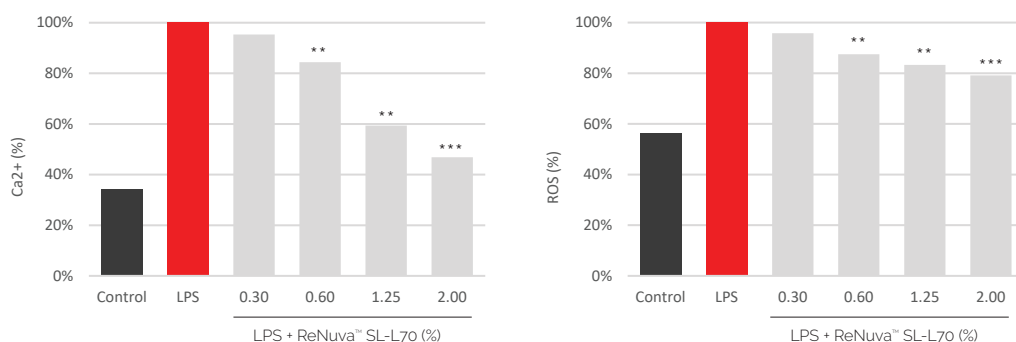
Study 2A

Anti-inflammatory activity of ReNuva™ SL-L70 at various concentrations under stimulation of LPS.



Study 2B

Measuring post-inflammatory regulation of Ca²⁺ and ROS using ReNuva™ SL-L70 at various concentrations.



Definitions:

- Sophorolipid:** Surface-active Glycolipids compound that is synthesized by a selected number of non-pathogenic yeast species including *Candida Bombicola*
- LPS:** Lipopolysaccharide is a known irritant inducing expression of inflammatory cytokines in macrophages
- Triglycerides Blend:** Includes palmitic (35%), oleic and linoleic (25%), linolenic (10%), fatty acid and vitamins
- NO, TNF-α, IL-6:** Pro-inflammatory cytokines
- Ca²⁺:** Plays a key role in inflammation through a variety of mechanisms, including immune cell activation, inflammation mediators, chemokine/cytokine secretion, inflammasome activation
- ROS:** Reactive oxygen species are involved in the initiation, progression, and resolution of inflammation
- COX-2:** Cyclooxygenase-2 is an important enzyme in the conversion of arachidonic acid to prostaglandins, which is involved in the inflammatory process
- *: $p < 0.05$ **: $p < 0.01$ ***: $p < .001$