

Inflamox™ Plus

Skin Normalizer



**GREEN
LINE**

INGREDIENTS

INFLAMOX™ PLUS: Soothing Skin & Strengthening Scalp Defense

In the realm of modern skincare, where the skin faces various challenges like redness and inflammation across different skin types, finding effective solutions is crucial. Inflammox™ Plus, meticulously crafted from natural botanicals – Rosemary, Ginger, and Turmeric extracts, harmoniously blended with the nourishing essence of Cranberry Seed Oil. This potent active ingredient acts as a shield against the effects of modern life on the skin & scalp, offering exceptional antioxidant and anti-inflammatory properties. Inflammox™ Plus not only alleviates irritation but also provides nourishment and protection. Its herbal spicy aroma not only enhances skincare routines but also serves as a versatile fragrance. Seamlessly blending into any daily regimen, this multifunctional active offers both skincare benefits and a pleasant scent, making it an essential addition to any skincare or haircare routine.



UPCYCLED CRANBERRY SEED OIL:

Cranberry seeds, a byproduct of our harvesters dried fruit production, are repurposed to extract oil, contributing to a reduction in residual materials at our production facilities. This upcycled oil is then incorporated into our finished products. Their field-to-finish approach ensures that the oil used is both organic and sustainably sourced. As a leading Canadian company founded in organic farming, our harvester prioritizes environmental responsibility throughout our production process. The organic cranberries, sourced from Quebec, Canada, benefit from natural pollination and innovative organic farming practices. These practices, including closed-loop cultivation techniques utilizing rainwater and snowmelt collection, help us minimize environmental impact. Processing takes place in close proximity to the fruit harvesting site, further enhancing our commitment to sustainability.



INCI: Vaccinium Macrocarpon (Cranberry) Seed Oil, Rosmarinus Officinalis (Rosemary) Leaf Extract, Curcuma Longa (Turmeric) Root Extract, Zingiber Officinale (Ginger) Root Extract

GINGER:

Rich in compounds like 6-gingerol, ginger has been used for centuries in traditional medicine for its anti-inflammatory effects. 6-gingerol has been shown to inhibit the synthesis of cytokines, which are signaling molecules involved in inflammation. By reducing cytokine levels, ginger helps to calm and soothe irritated skin, making it an excellent ingredient for combating redness and inflammation.



TURMERIC:

Another powerhouse ingredient, turmeric contains a compound called ar-turmerone, which is known for its anti-inflammatory properties. Ar-turmerone works by reducing the production of inflammatory markers in the skin, helping to alleviate redness and irritation. Turmeric also possesses antioxidant properties, which can help protect the skin from oxidative stress caused by environmental aggressors like pollution and UV radiation.



ROSEMARY:

Rosemary is rich in antioxidants and has anti-inflammatory properties that can help soothe and calm irritated skin. It contains rosmarinic acid, which has been shown to reduce inflammation and redness in the skin. Additionally, rosemary has antimicrobial properties, making it beneficial for maintaining skin health.



CONSUMER STUDY:

Consumer Perception of Inflamox™ Plus' Facial Skin Redness Reduction

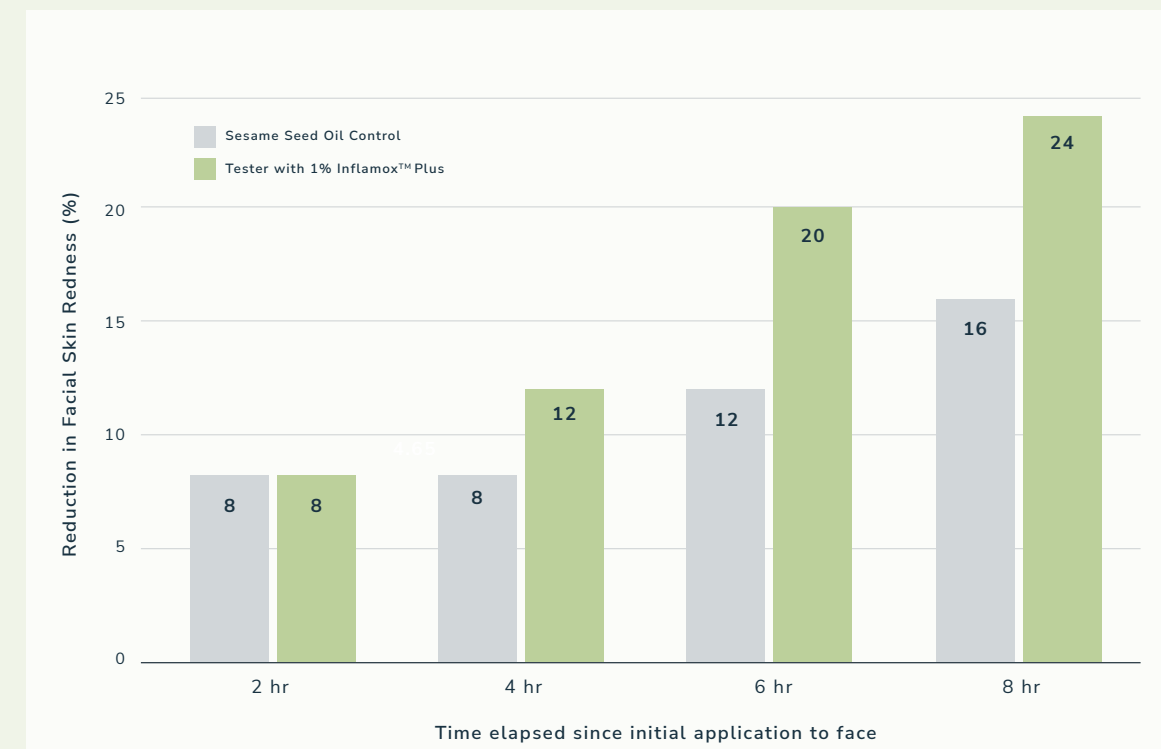


FIGURE 1: The test sample with Inflamox™ Plus began showing greater redness reduction than the control at 4 hours, with its greatest reduction observed at 8 hours. The test sample with Inflamox™ Plus showed the greatest efficacy in comparison to the control at 6 hours, where its redness reduction was ~1.66 times that of the control.

RECOMMENDATIONS:

Use Level: 1-2%

Applications:

- Skin soothing formulations
- After sun lotions
- Calming night creams
- Cleansing oils
- Body lotions



IN-VITRO STUDY:

Anti-Inflammation Potential of Inflamox™ Plus

Skin irritation includes different events leading to the development of an inflammatory response at the site of exposure. Cytokines are a family of proteins that regulate the inflammatory and immune response. These cytokines are soluble molecules acting as chemical mediators released during the process, which help to intensify the inflammatory response.

The anti-inflammatory potential of Inflamox™ Plus was tested through assessment of the UVB-induced expression of 2 genes (TNF-alpha and IL-6), directly involved in inflammatory pathways, after in vitro treatment on human keratinocytes (Normal Human Epidermal Keratinocytes) using RT-qPCR quantification.

IN VITRO EFFECT OF INFLAMOXTM PLUS ON NHEK TNF-ALPHA GENE EXPRESSION

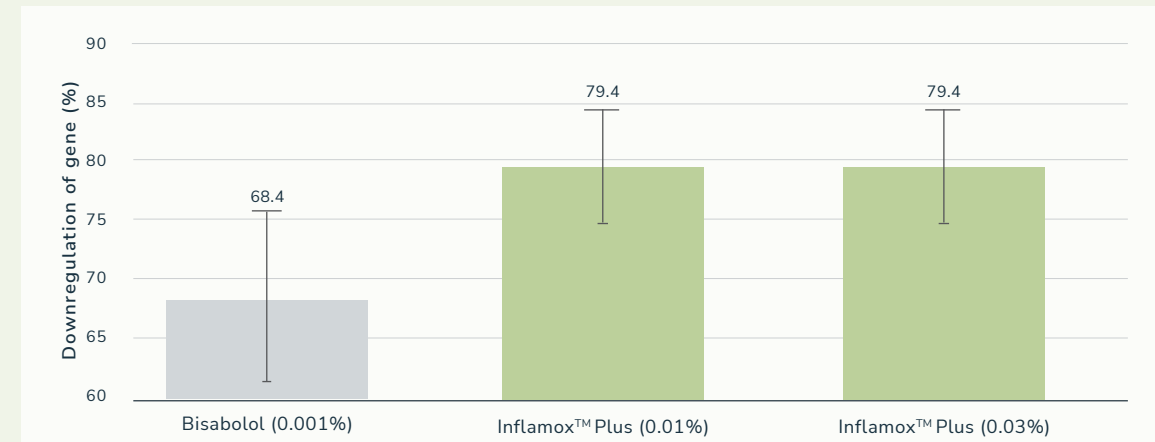


Figure 4: Inflamox™ Plus at 0.01% and 0.03% show a significant dose-independent down regulation of TNF-alpha greater than bisabolol at 0.001%

IN VITRO EFFECT OF INFLAMOXTM PLUS ON NHEK IL-6 GENE EXPRESSION

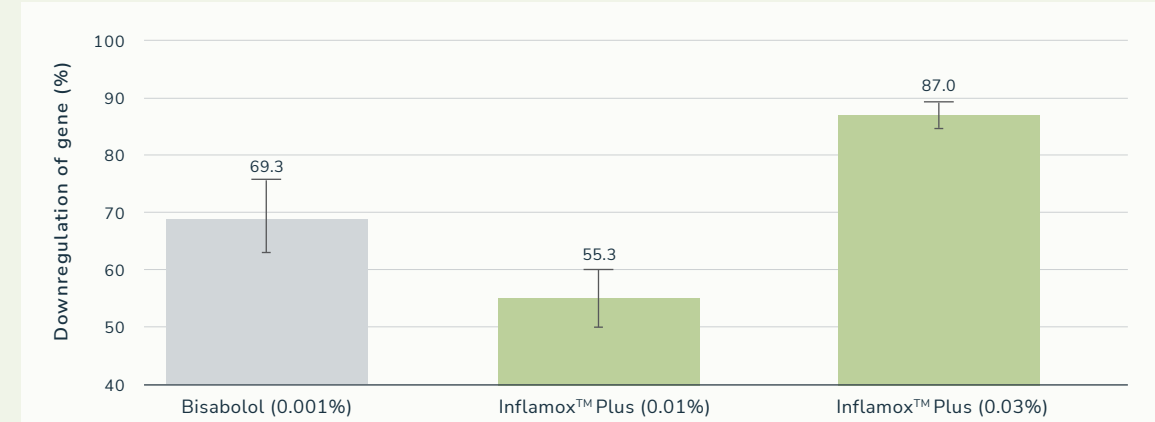


Figure 4: Inflamox™ Plus at 0.03% shows a strong dose-dependent downregulation of IL-6 greater than bisabolol at 0.001%. Inflamox™ Plus at 0.01% also displayed an ability to downregulate IL-6.

ANALYTICAL STUDIES:

To Ensure the Scalp Remains Healthy Post-Inflammatory Response

HHFK (Human Hair Follicle Keratinocytes) were used in this study & exposed to UVA light, then treated with Inflamox™ Plus for 24 hours. It clinically proved to be able to show that treatment with Inflamox™ Plus for 24 hours triggered significant ROS average reduction levels by 55.5%, 56.5%, and 58.8% at 0.0001%, 0.001%, and 0.01%, when compared to untreated Control + UVA.

UVA PROTECTION (ROS) - HHFK (24H)

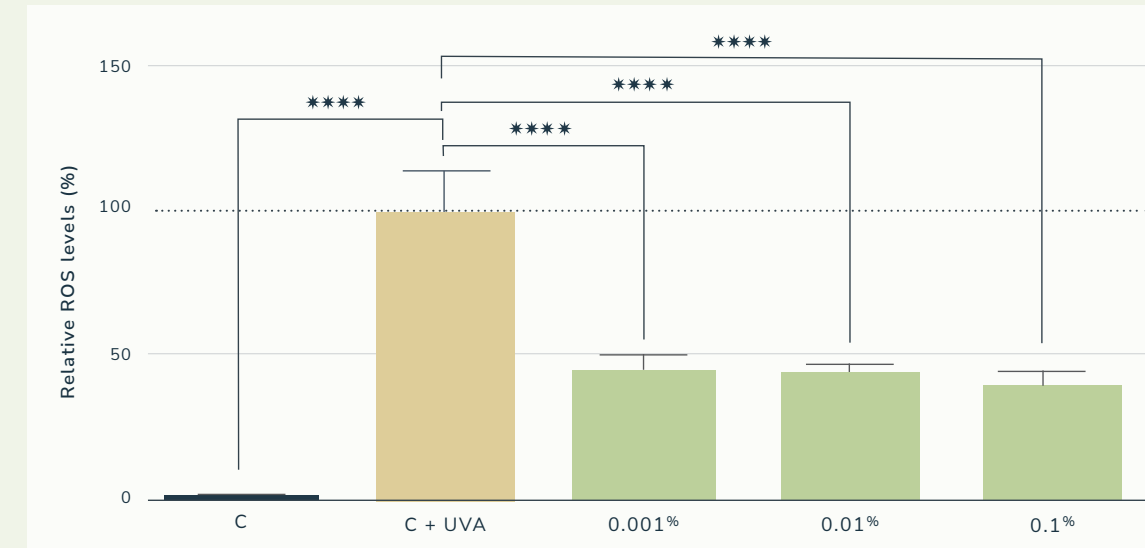


Figure 1. Protective effect of Inflamox™ Plus from the UVA-induced oxidative stress. Bar graph representing Reactive Oxygen Species (ROS) levels normalized to Control + UVA, after 24 hours of treatment in HHFK with Inflamox™ Plus and subsequent exposure to UVA light. Asterisks (*) over bars indicate statistical significance vs Control + UVA (Dunnett's post hoc multiple comparisons test).

Antioxidant Capacity

INFLAMOXTM PLUS IN SAFFLOWER SEED OIL— HYDROXYL RADICAL SCAVENGING ACTIVITY

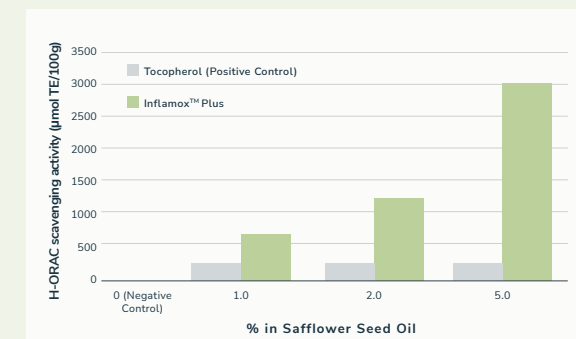


Figure 2: Hydroxyl Radical Scavenging Activity (HORAC) Assay: This assay tests the antioxidant scavenging action against the hydroxyl radical, which is one of the most destructive free radicals in the human body. Inflamox™ Plus displays significantly higher H-ORAC activity in Carthamus tinctorius (safflower) seed oil than the positive control, tocopherol.

INFLAMOXTM PLUS ANTIOXIDANT ACTIVITY ON SAFFLOWER OIL

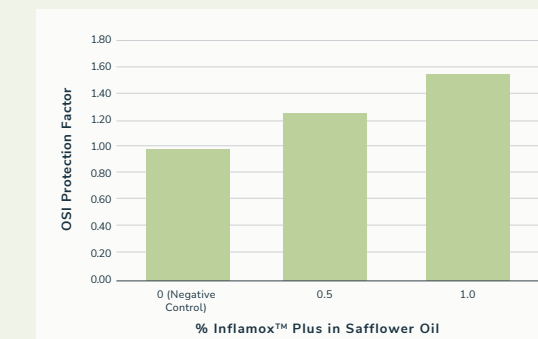


Figure 3: Oxidative Stability Index (OSI) Protection Factor: Inflamox™ Plus achieves a 1.58 OSI Protection factor in Carthamus tinctorius (safflower) seed oil with a 1.00% usage rate. This protection factor supports Inflamox™ Plus' ability to extend the shelf life of a product's oil phase.

Botanical Balm

FORMULA CODE: GLP-0001 VERSION DATE: 02/01/23

TRADE NAME SUPPLIER	INCI	%
PHASE A		
DI Water / Stock	Water	68.41
GreenGard™ PA / Green Line	Phytic Acid (and) Water	0.10
PHASE B		
Glycerin Stock	Glycerin	3.00
Guar Gum / Stock	Cyamopsis Tetragonoloba (Guar) Gum	0.15
PHASE C		
GreenWax™ N MB / Green Line	Polyglyceryl-3 Stearate (and) Cetearyl Alcohol (and) Glyceryl Caprylate	6.00
GreenWax™ GL MB / Green Line	Cetearyl Alcohol (and) Glyceryl Laurate	5.00
GreenSens™ IL MB / Green Line	Isoamyl Laurate	5.00
Castor Oil Stock	Ricinus Communis (Castor) Seed Oil	3.00
Sea Buckthorn Oil	Hippophae Rhamnoides (Sea Buckthorn) Seed Oil	2.00
GLE Rosehip Seed Oil Green Line	Rosa Canina Seed Oil	2.00
Inflamox™ Plus / Green Line	Vaccinium Macrocarpon (Cranberry) Seed Oil (and) Rosmarinus Officinalis (Rosemary) Leaf Extract (and) Zingiber Officinalis (Ginger) Root Extract (and) Curcuma Longa (Turmeric) Root Extract	1.00
Radigard™ SF-R Green Line	Carthamus Tinctorius (Safflower) Seed Oil (and) Rosmarinus Officinalis (Rosemary) Leaf Extract	1.00
Organic Virgin Coconut Oil Stock	Cocos Nucifera (Coconut) Oil	0.60
PHASE D		
Lemon Myrtle CO2 Extract Flavex	Backhousia Citriodora (Lemon Myrtle) Leaf Extract	0.08
Rosemary Moroccan Essential Oil Lebermuth	Rosmarinus Officinalis (Rosemary) Leaf Oil	0.08
Peppermint Indian Essential Oil Lebermuth	Mentha Piperita (Peppermint) Oil	0.08
PHASE E		
GreenGard™ LA / Green Line	Water (and) Arginine Levulinate (and) Arginine Anisate	2.50
PHASE F		
Citric Acid (50% Aq Solution) / Stock	Citric Acid (and) Water	0.00
Sodium Hydroxide (25% Aq Solution) / Stock	Water (and) Sodium Hydroxide	0.00

Please note: The information provided on this formulation sheet is provided as guidance and subject to change. This formula is not intended to be a commercial product.

PROCESSING

- In a suitably-sized main kettle, weigh Phase A and begin propeller mixing while heating to 70-75C.
- Pre-blend Phase B in a separate container, add to main kettle while propeller mixing. Mix until uniform and continue heating.
- In a suitably-sized side kettle, weigh Phase C and mix/heat to 70-75C* (*Ingredients should be molten at temperature).
- When both kettles are uniform and at proper temperature, add side kettle to main kettle while propeller mixing. Maintain temperature and continue mixing with vortex* (*Be careful to not aerate batch) for 5 minutes.
- Switch to homogenization and mix for 1-2 minutes per Kg batch size with cooling.
- Switch to sweep mixing, and mix while continuing to cool.
- Pre-blend Phase D ingredients in a separate container. Add to main kettle when batch is at 50-55C and continue to mix and cool.
- Add Phase E ingredient when main kettle is uniform. Continue to mix and cool until main kettle reaches room temperature.
- If necessary, adjust pH of main kettle with ingredients listed in Phase F.
- Discharge batch when in spec and at room temperature ingredients listed in Phase F.

FORMULA SPECIFICATIONS (at room temperature)

Appearance: Viscous Cream, TMS
 Color: Pale Yellow, TMS
 Odor: Fragrance Blend @ 0.24%, TMS
 pH: 4.5-5.5
 Viscosity: n/a

DESCRIPTION:

Our Botanical Balm formulation is a rich, plant-based moisturizer for face and body that utilizes GreenWax™ N MB, our most versatile emulsifier in combination with GreenWax™ GL MB to create a unique texture and application. Inflamox™ Plus, our anti-redness and anti-inflammatory active formula calms sensitive, dry, irritated and problem skin.

RECOMMENDED PACKAGING:

Jars





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