

## NATURALLY AND TRULY ISOLATED

Product Catalogue

www.natrusolate.com

## NATRUSOLATE IS THE **BRANDED INGREDIENT DIVISION OF INDUS BIOTECH**

Indus Biotech has more than 209 granted patents, 35 human clinical studies, 72 peer reviewed publications and 60 toxicological studies









60

#### PROCESS, BENEFITS AND ATTRIBUTES





Extracted using only water and cane alcohol

100% recovery of active markers



World class manufacturing facilities



Extracts of active markers of highest purity



No industrial solvents or chemicals



Certifications & accreditations of global standards



Safety validated through comprehensive toxicological studies



Highest standards of QC/QA to ensure batch consistency. ETO-ECH free tested as per European regulations



Allergen free products

INNOVATIVE INGREDIENTS WITH APPLICATIONS FOR THE NUTRACEUTICAL COSMECEUTICAL, PHARMACEUTICAL AND FOOD INDUSTRIES.

## **FENUFLAKES** <sup>TM</sup>

Fiber



HIGH SOURCE OF NATURAL FIBER AND PLANT-BASED PROTEIN

Fenuflakes<sup>™</sup> are a novel fiber and plant protein, derived from fenugreek that has a neutral taste, that can increase the nutritional value in a variety of food applications. Fenuflakes<sup>™</sup> are nutritionally dense, providing an excellent source of dietary fiber and plant-based protein.

#### PRODUCT USPs

- 100% plant fiber and protein
- 1:1 ratio insoluble to soluble fiber
- Non-GMO Project Verified
- Low-FODMAP Certified
- Neutral taste
- High in branched chain amino acids
- Extremely low fat and net carbs
- Phyto-estrogen free
- Gluten-free, vegan, vegetarian, halal, kosher, suitable for keto diets
- Manufactured in a USFDA inspected cGMP facility
- Prebiotic Potential
- Also available in powder form (Fenfuflakes Powder)

#### SPECIFICATION

Fiber content ≥ <b>50%</b>	Protein Content ≥ 25%
Soluble Fiber ≥ 25%	Net Carbs ≤ 3%
Insoluble Fiber ≥ 25%	Fat content ≤ 5%

#### NUTRITIONAL BENEFITS OF FENUFLAKES

Fenuflakes being a great source of dietary fibre with almost equal ratio of Soluble to insoluble fibre and good quality plant protein with 9 essential amino acids present is an excellent alternative to established sources of plant protein. Almost 10% of total protein available in Fenuflakes is branched chain amino acid (BCAA). In addition to this, Fenuflakes being ultra low in carbs and allergen free enhances nutritional value of your food without any side effects unlike other sources of plant protein available in the market. Fenuflakes provides long term satiety due to high fibre and high protein content



#### **APPLICATIONS**

- Enhances the nutritional value of food
- Therapeutic diets (diabetic, ketogenic etc.)
- Baked goods & products
- Breakfast cereals
- Snacks, yoghurt and frozen desserts
- Meal replacements, smoothies & shakes
- Nutritional/Sports supplements
- Weight management products
- Pet foods
- High fiber, sugar-reduced foods

#### POSITIONING

- Nutritional Fortification (Fiber, Protein)\*
- Supports digestive health\*
- Helps to increase satiety and fullness\*
- Supports weight management\*
- Reduces glycemic index\*
- Supports heart health\*
- Aid for weight management/loss\*
- Prebiotic\*
- Helps improve gut health\*
- May help with blood glucose regulation\*

#### **CLINICAL TRIALS**

Fenuflakes has shown promising results in a clinical study for the maintenance of healthy blood glucose levels.

Currently undergoing Glycemic Index (GI) study to evaluate effectiveness of Fenuflakes in reduction of GI in high GI foods.



The unique manufacturing process involved in the production of Fenuflakes ensures that protein profile of Fenugreek seeds is intact. Fenuflakes contains all 4 fractions of proteins (Albumin, Globulin, Glutelin and Prolamin) which are present in Fenugreek seeds



### COMPARISON OF OTHER PLANT PROTEINS WITH FENUGREEK PROTEIN

#### HPLC PROTEIN PROFILE OF FENUFLAKES



#### **QUALITY CERTIFICATIONS**







#### **VINOMERIX**<sup>TM</sup> Grape Seed Extracts



VINOMERIX IS A SERIES OF HIGHLY PURIFIED GRAPE SEED EXTRACT

The Vinomerix series is cultivated from grapes exclusively from the Champagne region of France and standardized to various monomer contents.

#### AUTHENTICATED GRAPE SEED EXTRACT

Grape seed extract is a dietary supplement known for decades for its health benefits and numerous scientific studies supporting them. Vinomerix is manufactured using the Grape seeds which are authenticated by DNA barcoding. We provide HPLC fingerprinting to prove quality and 100% authenticity of Vinomerix.

Vinomerix is manufactured using the most premium quality of grapes, cultivated in the champagne region of France. The manufacturing process ensures usage of cane alcohol and water only. Additionally, it has markers estimated by HPLC and it's water soluble. It has a higher antioxidant potency than resveratrol on human HepG2 cell.

#### **PRODUCT USPs**

- High in Catechin, Epicatechin and their oligomers
- Manufactured from grapes cultivated in Champagne Region
- Manufactured using only water and cane alcohol
- Authenticated Grape seed extract by HPLC and raw material by DNA barcoding
- Markers estimated by HPLC
- Water Soluble
- Higher antioxidant potency than Resveratrol on human HepG2 cell
- Gluten free
- Vegan
- Fully traceable from harvest to finished product
- Non-GMO Project Verified



#### **HEALTH BENEFITS**

- Anti-oxidant\*
- Cardiovascular Health and Circulation\*
- Skin health\*
- For Chronic Venous Insufficiency\*
- Muscle Growth and Endurance\*
- Improved Vision\*
- Anti-aging\*
- Immunity Enhancement\*

#### VARIANTS AND SPECIFICATION

#### A. VINOMERIX TM

Total Polyphenols by	Monomers by
Folin C method	HPLC
≥ 90%	≥ 5%

#### B. VINOMERIX OPTIMA

Total Polyphenols	Monomers by	OPC by
(OPC + Monomers)	HPLC	GPC HPLC
≥ <b>96</b> %	≥ 16%	≥ 80%

#### C. VINOMERIX ELITE

Monomers by HPLC

≥ 25%



#### ANTIOXIDANT STUDY



The antioxidant potential of Vinomerix Optima was evaluated by LUCS (Light-up cell system) technology in a human liver cell model. Vinomerix Optima shown higher antioxidant potential than Resveratrol on human HepG2 cell.



EC50 is the concentration that gives half-maximal effective response. The lower the EC50, the higher the antioxidant potential.

#### **QUALITY CERTIFICATIONS**



#### **MINTNEXT**<sup>TM</sup> Series



**MINTNEXT IS A SERIES OF HIGHLY PURIFIED MINT (MENTHA ARVENSIS L.) EXTRACTS** 

Mintnext is standardized for various concentrations of rosmarinic acid. Mentha arvensis is an ancient medicinal herb used in traditional medicinal system and various food preparations.

#### **PRODUCT USPs**

- High Rosmarinic Acid Content •
- Manufactured using only water and ethanol •
- Potent Antioxidant Activity ٠
- Water Soluble •
- Gluten free
- Vegan
- Non-GMO Project Verified

#### VARIANTS AND SPECIFICATIONS

Rosmarinic acid -≥ 5%

#### **B. MINTNEXT RA 15%**

Rosmarinic acid -≥ 15%

#### C. MINTNEXT RA 25%

Rosmarinic acid -≥ 25%



#### **APPLICATIONS**

Capsules, Tablets, Beverages, Cosmetics, Bars, Gummies, Drink Mixes, Dissolving Strips, Sachets, Transdermal Patches etc.

#### **HEALTH BENEFITS**

- Cognitive Health\*
- Anti-inflammatory\*
- Antioxidant\*
- Food preservation\*

#### **SCIENCE AND RESEARCH**

Research suggests that Rosmarinic acid helps with minor aches and soreness due to its potent anti-inflammatoryproperties.

Rosmarinic acid has potent radical scavenging activity which may help in cognitive health with its neuroprotective properties.

Rosmarinic acid is a natural antioxidant and can be used as a preservative for various foods.



#### **ROLE IN PAIN MANAGEMENT**

Scientific studies suggest that Rosmarinic acid helps in alleviation of pain due to its potent anti-inflammatory property\*

#### ROLE OF ROSMARINIC ACID IN COGNITIVE HEALTH

Cognitive impairment is a major component of age-related dementing diseases and it has been suggested that it could share the same pathological pathways with neurodegenerative processes and cerebrovascular lesions Neuronal damage occurs due the overproduction of free radicals resulting from age, smoking, diabetes etc\*. Rosmarinic acid has potent radical scavenging activity which may help in cognitive health by limiting neuronal damage

#### **ROLE OF NATURAL ANTIOXIDANT IN FOOD PRESERVATION**

**MEAT AND FOOD** - Natural antioxidant helps to extend the shelf life of meat and food products by preventing bacterial growth and oxidation of fat and protein\*

**EDIBLE OILS AND FATS** - In order to prevent rancidity and to extend storage period of animal and vegetable oils and fats, there is a need to add a certain amount of antioxidants. Natural antioxidant is being studied for the role in prevention of rancidity of oil due to its high antioxidant activity\*

#### **QUALITY CERTIFICATIONS**



\*Berr C. Cognitive impairment and oxidative stress in the elderly: results of epidemiological studies. Biofactors. 2000;13(14):205-9.

\*Velasco V, Williams P. Improving meat quality through natural antioxidants.Chilean journal of agricultural research. 2011 Apr 1;71(2):313.

\*Taghvaei M, Jafari SM. Application and stability of natural antioxidants in edible oils in order to substitute synthetic additives. Journal of food science and technology. 2015 Mar 1;52(3):1272-82. \*Rahbardar MG, Amin B, Mehri S, Mirnajafi-Zadeh SJ, Hosseinzadeh H. Rosmarinic acid attenuates development and existing pain in a rat model of neuropathic pain: an evidence of anti-oxidative and anti-inflammatory effects. Phytomedicine. 2018 Feb 1;40:59-67.

## **BIOCREAT** <sup>TM</sup>



BIOCREAT IS A HIGHLY PURIFIED EXTRACT SHOWN TO SIGNIFICANTLY INCREASE MUSCLE MASS, STRENGTH AND POWER.

Biocreat enhances creatine efficiency significantly impacting strength and body composition. All the benefits of creatine without the added sugar and calories.

#### **PRODUCT USPs**

- Clinically Proven
- Published University Study
- Increases Strength and Power\*
- Increases Lean Muscle Mass\*
- Highly Standardized
- Evaluated head-to-head vs creatine + 75g sugar
- Outperforms Traditional Creatine Dosing
- No Sugar, No Loading Required, No Crash
- Gluten-Free, Vegan, Halal, Kosher
- Non-GMO Project Verified
- Also available in taste-masked variant for powder mixes

#### **SPECIFICATION**

Total amino acid - ≥ 20% Trigonelline – ≥ 15%



#### **APPLICATIONS**

Capsules, Tablets, Beverages, Cosmetics, Bars, Gummies, Drink Mixes, Dissolving Strips, Sachets, Transdermal Patches, Gel

#### **HEALTH BENEFITS**

- Increases strength and power output\*
- Increases creatine bioavailability in muscle cells\*
- Increases lean muscle mass\*

#### **CLINICAL STUDY**

Effects of combined creatine plus fenugreek extract vs. creatine plus carbohydrate supplementation on resistance training adaptations. (2011)

Effects of BIOCREAT Supplementation on Strength and Body Composition During an 8-week Resistance Training Program. (2009)





#### INCREASES STRENGTH & POWER BIOCREAT + CREATINE VS PLACEBO



#### **QUALITY CERTIFICATIONS**



\*Taylor et al. 2011. Effects of combined creatine plus fenugreek extract vs. creatine plus carbohydrate supplementation on resistance training adaptations. J Sports Science Med. 10:254-260

\*Lewing et al. (2009). Effects of BIOCREAT Supplementation on Strength and Body Composition During an 8-week Resistance Training Program. JISSN. 6(Suppl 1):P11

## **HYPEROX**<sup>TM</sup>



#### HYPEROX EXTENDS THE EFFECTS OF NITRIC OXIDE

Hyperox is uniquely standardized for Yamogenin glycosides, that has been shown to block the enzyme which degrades the nitric oxide signal. It is designed to accelerate nutrient delivery allowing for increased muscle growth.

#### **PRODUCT USPs**

- Enhances the nitric oxide signal\*
- Extends and prolongs vasodilation\*
- Accelerates nutrient delivery\*
- Novel mechanism of action (PDE5 Inhibitor) \*
- Only needs to be taken on training days\*
- Non-Stimulant pump
- Sensory effect, felt after the first dose
- Water-soluble
- Manufactured using only water and cane alcohol
- Gluten-free, Vegan, Halal, Kosher
- Non-GMO Project Verified
- Also available in a taste-masked variant for powder mixes

#### VARIANTS AND SPECIFICATIONS

#### **A.HYPEROX**

Yamogenin glycosides ≥ 30%

#### **B. TASTE MASKED HYPEROX**

#### Available for Ready To Mix

Safety of Hyperox has been evaluated in 5 toxicological studies as per OECD guidelines. Hyperox was found to be safe, nontoxic and non-mutagenic.



#### **APPLICATIONS**

Capsules, Tablets, Beverages, Cosmetics, Bars, Gummies, Drink Mixes, Dissolving Strips, Sachets, Transdermal Patches, Gel

#### POSITIONING

- Pre-workout\*
- Vasodilator\*
- Nitric Oxide Booster\*
- Nutrient Delivery\*

#### PDE5 ENZYME INHIBITORY ACTIVITY OF HYPEROX

An enzyme assay was conducted to determine the PDE5 inhibitory activity of Hyperox. The study results showed that Hyperox had a significant effect on inhibition of PDE5 enzyme (IC50 the maximal inhibitory concentration was  $52.2 \ \mu g/ml$ ).

Hyperox enhances the benefits of nitric oxide by extending the second messenger enzyme cGMP resulting in a prolonged vasodilation. This can lead to increased nutrient delivery, exercise performance and muscle mass, when used under the appropriate conditions.



#### **EFFECT OF PDE5 INHIBITORS**





#### **QUALITY CERTIFICATIONS**



\*Peixoto CA, Nunes AK, Garcia-Osta A. Phosphodiesterase-5 inhibitors: action on the signalling pathways of neuroinflammation, neurodegeneration, and cognition. Mediators of inflammation. 2015;2015.

\*In Vitro Study – Phosphodiesterase type 5 (PDE5) Enzyme Inhibition

\*In Vivo Study – Vasodilator Activity

## **SEROCEN**<sup>TM</sup>



SEROCEN IS A HIGHLY PURIFIED CENTELLA ASIATICA L. EXTRACT

Serocen is standardized for specific Triterpenoid glycosides. Centella Asiatica L. has been used as a food and medicinal herb for thousands of years in India, China, Srilanka, Nepal and Madagascar.

#### **PRODUCT USPs**

- Patented Product
- High Asiaticoside and Madecassoside content
- Soluble in water
- Manufactured using high quality Centella Asiatica from Madagascar
- Manufacturing process uses cane ethanol and water
- Excellent for stress hormone cortisol management
- Gluten free
- Vegan

#### SPECIFICATION

Asiaticoside & Madecassoside ≥ 50% by HPLC

Asiaticoside 15-50% by HPLC

Madecassoside 20-50% by HPLC



#### **APPLICATIONS**

Capsules, Tablets, Beverages, Cosmetics, Bars, Gummies, Drink Mixes, Dissolving Strips, Sachets, Transdermal Patches, Gel

#### **HEALTH BENEFITS**

- Stress reduction\*
- May Reduce Headache\*
- Anti-inflammatory\*
- Anti-aging\*
- Cortisol Management\*

#### PRECLINICAL SAFETY ASSESSMENT

#### MULTIPLE TOXICOLOGICAL STUDIES:

- Acute oral toxicity 2,000 mg/kg
- 90 day repeated dose toxicity 1,000 mg/ kg/day in males and 500 mg/kg/day in females
- In-vitro bacterial reverse mutation assay (AMES Test) - 5,000 μg/plate
- Pre-natal developmental toxicity study -1000 mg/kg
- Acute intranasal toxicity 100 microliter/rat
- 28-days intranasal toxicity 100 microliter/ rat/day



#### **PRE-CLINICAL STUDY**

After 14 days treatment with SEROCEN (30mg/kg), it has shown significant (\*\*\*P<0.001) reduction in cortisol levels in rats with isolation induced depression



#### **QUALITY CERTIFICATIONS**



\* Deshpande PO, Mohan V, Thakurdesai P. Preclinical safety assessment of standardized extract of Centella asiatica (L) urban leaves. Toxicology international. 2015 Jan;22(1):10. \* Kalshetty P, Aswar U, Bodhankar S, Sinnathambi A, Mohan V, Thakurdesai P. Antidepressant effects of standardized extract of Centella asiatica L in olfactory bulbectomy model. Biomedicine & Aging Pathology. 2012 Apr 1;2(2):48-53



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## **RECOUPEDROL**<sup>™</sup>



RECOUPEDROL IS HIGHLY PURIFIED STANDARDIZED EXTRACT BACKED BY 4 HUMAN CLINICAL STUDIES

Recoupedrol is an innovative ingredient that has been clinically shown to reduce exercised-induced inflammatory markers, promotes healthy joints and possess antiaging properties when used as a cosmeceutical.

#### **PRODUCT USPs**

- Backed by 4 human clinical studies, including multiple preclinical and toxicological studies.
- Human safety assessed for one year
- Water-soluble
- Manufactured using only water and cane alcohol
- Gluten-free, Vegan, Halal, Kosher
- Manufactured in a certified cGMP facility
- Non-GMO Project Verified
- Also available in a taste-masked variant for powder mixes

#### SPECIFICATION

Glycoside ≥ 80% by HPLC

#### **HEALTH BENEFITS**

- Joint Health
- Post-workout Recovery
- Anti-aging



#### **CLINICAL STUDIES**

#### JOINT HEALTH

After 12 months of treatment, the RF (Rheumatoid factor) titer reduced significantly by 55% in patients treated with RECOUPEDROL.



RECOUPEDROL showed significant improvement in joint health and function after 12 months treatment





#### **POST-WORKOUT RECOVERY**

Recoupedrol treated group showed significant reduction in the proinflammatory cytokine IL-1ra



**ANTI-AGING** effect of RECOUPEDROL on facial skin evaluated in women by Monocentric, double blinded, placebo controlled, randomized parallel study. RECOUPEDROL showed significant improvement in skin elasticity, skin roughness and collagen distribution on day 30 from baseline whereas placebo did not show these improvements from baseline. Also, skin barrier properties are maintained on day 30 and day60.

#### **QUALITY CERTIFICATIONS**



\* Deshpande PO, Mohan V, Thakurdesai P. Preclinical safety assessment of standardized extract of Centella asiatica (L.) urban leaves. Toxicology international. 2015 Jan;22(1):10. \* Kalshetty P, Aswar U, Bodhankar S, Sinnathambi A, Mohan V, Thakurdesai P. Antidepressant effects of standardized extract of Centella asiatica L in olfactory bulbectomy model. Biomedicine & Aging Pathology. 2012 Apr 1;2(2):48-53

# **RECOUPEDROL**<sup>TM</sup>

## FENUGREEK™ PROTEIN



NON-GMO PROJECT VERIFIED SUSTAINABLE PLANT-BASED PROTEIN

Fenugreek protein is a sustainable plant-based protein that is low in fat and net carbs.

Through our patented, proprietary process, we have removed the bitterness and oil in the seeds, leaving a neutral great tasting protein.

#### **PRODUCT USPs**

- Novel Plant-based Protein
- 100% Natural
- Neutral Taste
- Non-GMO Project Verified
- Low-FODMAP Certified
- Allergen Free
- Phytoestrogen Free
- Gluten Free & Lactose Free
- Halal & Kosher Certified
- Vegan

#### **SPECIFICATION**





#### **APPLICATIONS**

- Nutritional/Sports Supplements
- Meal Replacements & Protein Bars
- Smoothies and Shakes
- Weight Management Products
- Non-dairy Alternative
- Nutritional Fortification
- Therapeutic diets (ketogenic etc.)
- Baked Goods & Products
- Therapeutic diets (ketogenic etc.)

#### NUTRITIONAL BENEFITS OF FENUGREEK PROTEIN

Fenugreek protein being a great source of dietary fibre with almost equal ratio of soluble to insoluble fibre and good quality plant protein with 9 ESSENTIAL AMINO ACIDS present is an excellent alternative to established sources of plant protein. Almost 10% of total protein in fenugreek protein are the branched chain amino acids (BCAAs).

In addition to this, fenugreek protein is ultra low in carbs and allergen free. It enhances the nutritional value of food without any side effects, unlike other sources of plant proteins. Fenugreek protein provides longer term satiety due to high fiber and its high protein content.



#### AMINO ACID PROFILE FENUGREEK PROTEIN



Fenugreek Protein contains 9 essential amino acids, 10% of the total proteins available being the branched chain amino acids (BCAAs).

#### **QUALITY CERTIFICATIONS**



FENUGREEK PROTEIN<sup>TM</sup>

## **TORABOLIC**<sup>TM</sup>



TORABOLIC<sup>®</sup> HAS BEEN CLINICALLY SHOWN TO INCREASE LEAN MASS AND STRENGTH, WHILE REDUCING BODY FAT PERCENTAGE

Torabolic<sup>®</sup> contains a highly purified patented standardized extract from Trigonella foenum graecum seeds, that has been shown to promote anabolic muscle activity and strength, without affecting androgenic hormones.

#### **PRODUCT USPs**

- Backed by 2 clinical studies, multiple toxicological and preclinical studies
- No hormonal side-effects
- Increases muscle mass and strength
- Improves body composition
- Reduces body fat
- Preserves muscle as you lose weight
- Water-soluble
- Gluten-Free, Vegan, Vegetarian, Halal, Kosher
- Non-GMO Project Verified
- Also available in a taste-masked variant for powder mixes

#### SPECIFICATION

Low Molecular Weight Galactomannan/Oligosaccharide ≥ 70%



#### **PRODUCT CATEGORIES**

- Sports Nutrition
- Muscle & Strength Building
- Weight Management
- Fat Loss

#### **APPLICATION**

Torabolic<sup>®</sup> offers excellent stability across a range of delivery forms including tablets, capsules, gummies, powders, beverages and functional foods.

#### **MULTIPLE SAFETY & CLINICAL STUDIES**

Effects of low molecular weight galactomannans based standardized fenugreek seed extract in subjects with high fat mass: A randomized, double-blind, placebo-controlled clinical study. (2020)

The effects of a commercially available botanical supplement on strength, body composition, power output, and hormonal profiles in resistance-trained men. (2010)

Effects of TORABOLIC supplementation on strength and body composition during an 8-week resistance training program. JISSN. (2008)











A double-blind, placebo-controlled study investigating efficacy and safety of Torabolic<sup>®</sup> on various fat mass related parameters.



#### **QUALITY CERTIFICATIONS**

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\$ 240

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1 Pallavi et al. (2020). Effects of low molecular weight galactomannans based standardized fenugreek seed extract in subjects with high fat mass: A randomized, double-blind, placebocontrolled clinical study. J App Pharm Sci. 2020; 10(1): 62-69.

2. Poole et al. (2010). The effects of a commercially available botanical supplement on strength, body composition, power output, and hormonal profiles in resistance-trained men. JISSN. 7(34):1-9

3. Wilborn et al. (2008). Effects of TORABOLIC supplementation on strength and body composition during an 8-week resistance training program. JISSN. 5(Suppl 1): P11

## **TORABOLIC**<sup>TM</sup>

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