pomanox®

A Natural Force for Vital Health

Whole Pomegranate Fruit Extract

FINALIST NUTRA INGREDIENTS AWARDS 2018
Healthy Ageing Category

Pure-Hydro™ PROCESS

Pomanox® is a patented (EP1967079) and standardised natural extract of pomegranate whole fruit, supported by multiple published studies.

Pomanox® is produced from pomegranates cultivated in Mediterranean regions of Spain through sustainable farming, under strict quality control of the raw material and with a green and eco-friendly proprietary technology: *The Pure-Hydro Process™*, based on ultrapure-water-only extraction.

Pure-Hydro Process™ preserves the natural, water-soluble, polyphenolic composition of whole pomegranate fruit and does not extract other non-water-soluble compounds. This avoids potential residual chemicals, fungal toxins or unsafe alkaloids from extraction with organic solvents.

PhytoProof® process of quality control is followed, ensuring purity, potency and identity for every batch.

Free from
- Organic solvents
- Animal products
- Radiation
- GMO
- Gluten

EUROMED
Nature & Science

C/ Rec de Dalt 21-23. P.I. Can Magarola. 08100 Mollet del Vallès (Barcelona) Spain. Tel.: +34 544 0110 **www.euromed.es**

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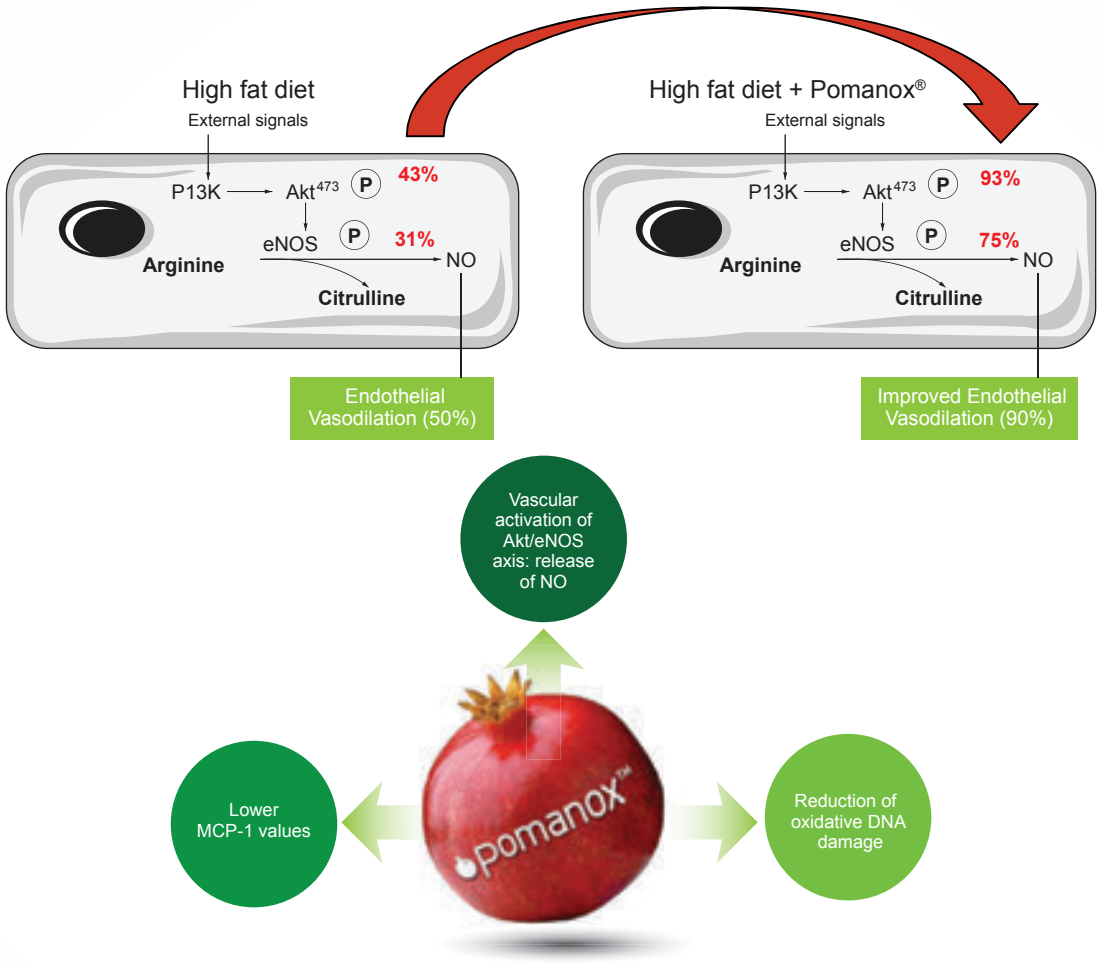
CARDIOVASCULAR

Mechanism of action

Pomanox® improves the function of endothelium cells in arteries through an increased activity of endothelial Nitric Oxide Synthase (eNOS) and by favourably counteracting vascular inflammation and oxidative damage.[1]

Polyphenol-enriched Diet Prevents Coronary Endothelial Dysfunction by Activating the Akt/eNOS Pathway
Vilahur G, et al. Rev Esp Cardiol (Engl Ed).(2015); 68(3): 216-25



Pomanox® and blood pressure

Results from several clinical studies investigating the effect of Pomanox® on blood pressure in healthy volunteers, report a consistent lowering of systolic blood pressure (SBP) and diastolic blood pressure (DBP). Pomanox® may support maintenance of healthy blood pressure.

Study	SBP basal	SBP post	Sig	DBP basal	DBP post	Sig
Tsang C, et al. Journal of Nutritional Science (2012) (7)	136.4 ±2.7	128.9 ±2.6	0.034	80.3 ±2.1	75.5 ±2.3	0.03
Al-Dujaili et al, BES (2012) (9)	123.5 ±4.4	119.6 ±2.4	<0.001	74.9 ±1.8	72.4 ±1.7	0.005
Al-Dujaili et al, EC Nutrition 4.6 (2016) (6)	136.7 ±3.6	130.6 ±3.8	0.001	86.3 ±2.7	82.9 ±2.5	0.05
Stockton A, et al. EC Nutrition 2.4. (2015) (3)	120.3 ±2.8	115.6 ±2.7	0.012	80.0 ±2.5	78.3 ±2.4	0.07
Stockton A, et al. EC Nutr Sci. (2017) (8)	116.46 ±1.4	114.22 ±1.2	0.0045	71.54 ±1.1	68.8 ±0.9	0.02

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OTHER EVIDENCE–BASED PROPERTIES

Healthy Aging

- Decreases serum levels of pro-inflammatory cytokines IL1β, IL6, TNF-α and other markers
- Increases serum level of the anti-inflammatory cytokine IL10

Oxidative Stress

- Reduces LDL oxidation and lipid peroxidation (TBARS)
- Attenuates exercise-induced oxidative stress
- Increases activity of glutathione peroxidase (GSH px) activity in plasma
- Decreases levels of 8-ox-dG, an indicator of DNA damage

Performance & Recovery

- Less muscle fatigue
- Faster recuperation
- Support of healthy testosterone levels

Digestive Health

- Reduction of undesirable microflora
- Increases beneficial Bifido- and Lactobacillus

Hair Health

- Reduction of normal hair loss
- Increases growth rate and density

Mood and Cognitive Health

- Reduces stress hormones
- Improves Quality of Life scores, mood, cognitive performance

Metabolic Health

- Supports healthy glucose metabolism

KEY STUDIES

Randomised Study: Punicalagins 80 mg / day for 30 days, 20 participants. Prepared for publication.
Conclusions: The consumption of Pomanox decreases serum levels of pro-inflammatory cytokines IL1β, IL6, IL8 and TNF-α, and increases serum level of the anti-inflammatory cytokine IL10

Double-blind, Placebo-Controlled, Randomised Study: Punicalagins 80 mg / day for 30 days, 20 participants.
Prepared for publication.
Conclusions: Pomanox consumption decreases biomarkers associated with oxidative stress

Pilot Human Intervention Study: 115mg Punicalagins/day, 28 days duration. Prepared for publication.
Conclusions: The consumption of Pomanox increases levels of beneficial flora (Lactobacillus and Bifidobacterium) and, at the same time, decreases levels of harmful bacteria and improves bowel functions. Proprietary in-vitro and animal studies with Pomanox confirm these properties

Longitudinal, Randomised Clinical Pilot Study: 110mg Punicalagins/day, 60 days duration 20 men with a mean age of 49 years and having no scarring alopecia: Punicalagins 110mg / day. Prepared for publication.
Conclusions: Intake of Pomanox may be of value in hair care, as suggested by: improved test score in the pull test, increased hair density and thickness and increased ratio of hair in the anagen / telogen phase

Clinical Study conducted by the Department of Exercise Physiology, UCAM (Catholic University of Murcia): 225 mg Punicalagins/day. Treatment duration: 15 days.
Conclusions: Pomanox supplementation (14 days) on trained cyclists increased total time to exhaustion (TTE) and time to reach ventilatory threshold 2 (VT2) significantly in a maximal test (IETE), after a long endurance effort, compared to placebo. Pomanox, after a prolonged submaximal effort, may be effective for improving performance outcomes in a maximal effort, and might help to restore force in the damaged muscles (4)

Preclinical Study (Swine Model): Swine were fed during 10 days a standard pig chow (N = 12) or a high fat/high cholesterol diet (Western-type diet, N= 12). Half of the animals were provided a daily supplement of Pomanox (200 mg Punicalagins/day).
Conclusions: In the Western-type diet animals, Pomanox supplementation prevented diet-induced endothelial issues and reduced systemic oxidative stress. Pomanox supplementation may support coronary endothelial health by activating the Akt/endothelial nitric oxide-synthase pathway and favorably counteracting vascular inflammation and oxidative damage (1)

Double-blind, controlled, crossover clinical trial: 195mg Punicalagins (as Pomanox) + 9,9mg Hydroxytyrosol (as Mediteanox) in 67 subjects aged 45-65 years, 20 weeks duration.
Conclusions: Supplementation with Pomanox and Mediteanox improves endothelial function and reduces LDL cholesterol oxidation in middle aged adult population apparently healthy with no established CVD (2)

Clinical Study: Double-blind, randomised, placebo-controlled exploratory study. All 29 participants consumed either one Pomegranate Extract (Pomanox) or a placebo capsule daily, after a meal, for 4 weeks. Each capsule of Pomanox contained 210 mg Punicalagins.
Conclusions: PE ameliorate cardiovascular risk factors, reduce stress levels and improve -perceived health related quality of life. The reduction in salivary cortisol levels may prove beneficial for people suffering from chronic stress (3)

Clinical Study: Daily dose: 210mg Punicalagins /day (Pomanox P30: 700mg) capsules or placebo capsules for 8 weeks. A total of fifty-five participants enrolled in this randomised double-blinded placebo-controlled clinical trial.
Conclusions: Results showed a significant decrease in diastolic blood pressure after 8 weeks (by 2·79 (SD 5·32) mmHg; $P < 0·05$), while the decrease in systolic approached statistical significance (2·57 (SD 7·4) mmHg; $P > 0·0$) (8)

In-vitro Study: Pomanox has been instrumental to reveal the mechanism of Interleukin-1β (IL-1β) release. IL-1β is a critical regulator of the inflammatory response (5)

Clinical Study: Randomised, single-blind, placebo-controlled parallel group trial. Pomegranate juice (PJ) with Pomanox (500 mL/day containing 1685 mg/l polyphenols) for 1 week, 24 healthy over-weight subjects (mean BMI: 26.7 ± 6.6 kg/m2).
Conclusions: PJ with Pomanox consumption prior to an acute bout of moderate intensity exercise may alleviate blood pressure and exercise-induced oxidative stress in the overweight and obese population (6)

Clinical Study: Parallel, randomised, double-blind, placebo-controlled study.
28 volunteers at high CVD risk (aged between 40 and 65 years with a BMI between 25 and 35 kg/m2, sedentary or moderately active) completed the study and each consumed 500 ml/d of PJ with Pomanox containing 1685 mg/l polyphenols for a period of 4 weeks.
Conclusions: PJ consumption can alleviate key cardiovascular risk factors in overweight and obese subjects that might be due to a reduction in both systolic and diastolic BP, possibly through the inhibition of 11β-hydroxysteroid dehydrogenase type 1 enzyme activity as evidenced by the reduction in the cortisol/cortisone ratio. Reduction in insulin resistance was also found (7)

Clinical Study: Placebo-controlled, repeated measure intervention trial in 55 healthy subjects administered Pomanox-enriched pomegranate fruit juice (500mL/day) for 2 weeks.
Conclusions: Pomanox-enriched Pomegranate juice intake enhances salivary Testosterone levels and improves mood and wellbeing in healthy men and women (9)

Clinical Study, Queen Margaret University (UK): double-blinded, randomised, placebo-controlled crossover pilot (20 participants, 2 week intervention).
Conclusions: Acute consumption of Pomanox (2 capsules containing 210mg Punicalagin) can improve aspects of cognitive performance in healthy adults. Compared to placebo, Pomanox significantly increased the accuracy of responses in the picture recognition test and other cognitive tasks. Prepared for publication (10)

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PRODUCT FEATURES

- **Name** : Pomanox®, pomegranate fruit extract (Punica granatum L.)
- **Taste:** Astringent
- **Solubility:** Water Soluble up to 100 g/l
- **Dosage:** 80-225 mg punicalagins α + β daily
- **Punicalagin content:** Up to 30% punicalagins by HPLC w/w
- **Antioxidant capacity:** Up to ORAC>5.700 µmol eq. Trolox/g
- **Manufacturing:** Proprietary ultrapure-water extraction (*Pure-Hydro Process*™)
- **Stability:** Stability assays according to international standards. Thermal stability to pasteurization, baking, etc. and low impact on the final product taste/flavor
- **Safety:** Acute toxicity (LD50); Cardiac toxicity; Fetal toxicity; FET (Fish Embryo Toxicity Test) Toxicity and Teratogenicity. The results were negative (no risk).
- **Efficacy:** Pre-clinical studies, several published academic clinical trials in key health areas, further being prepared for submission

Pomanox©	P15	P20	P30
Punicalagins	> 15%	> 20%	> 30%
Total phenols	> 32%	> 37%	> 50%
Ellagic Acid	< 8%	< 8%	< 8%
Form	powder	powder	powder

Summary

• Organic solvent-free. 100% vegetarian and natural. From pomegranate whole fruits. Patented (EP 1967079). Certified batch to batch consistency
• High content in bioavailable polyphenols that act synergistically. Standardized to Punicalagins α + β
• GMO-free, allergen-free, non-irradiated. Microbiology tests, heavy metals, pesticides, aflatoxins and ochratoxin A content comply with European standards
• Pomanox® is Kosher, Halal and Organic certified
• Pomanox® is a full spectrum extract with well characterized phenolic profile
• Pomanox® maintains all the healthy properties and the profile of the bioactive compounds present in the whole fruit (juice, seeds, inner membranes, husk), and contains low sugar
• Thanks to water-only Pure-Hydro-Process™ extraction technology, no concerns for residual chemicals or potentially toxic alkaloids pelletierine, methylpelletierine, pseudopelletierine and isopelletierine related to organic solvents extraction
• Supported by several publications and ongoing research
• Easy to use, apply and incorporate. Adaptable formulation to customer requirements

APPLICATIONS

Supplements | Beverages | Food | Pharma | Nutricosmetic | Nutraceutical

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PHYTO EUROMED PROOF

1. Vilahur G, et al. Rev Esp Cardiol (Engl Ed). (2015);68(3):216-25 **2.** Quirós-Fernández R, et al. Nutrients 2019, 11, 640 **3.** Stockton A, et al. EC Nutrition 2.4. (2015): 396-411 **4.** Torregrosa-García A, et al. Nutrients 2019, 11, 721 **5.** Martín-Sánchez F, et al. Cell Death Differ. (2016);23(7):1219-31 **6.** Dujaili AI, et al. EC Nutrition 4.6 (2016): 982-995 **7.** Tsang C, et al. J Nutr Sci. (2012), vol. 1, e9, page 1-9 **8.** Stockton A, et al. J Nutr Sci. (2017); 6: e39 **9.** Dujaili AI, et al. Endocrine Abstracts. (2012); 28 P313 **10.** Stockton et al, 2018, Unpublished observations.