

Contains 150mg of



# The Natural Scientifically Substantiated Solution for Healthy Blood Circulation

- Each capsule contains the effective dose of 150mg of natural water-soluble tomato extract imported from France
- The natural water-soluble tomato extract is clinically proven and approved by EFSA (European Food Safety Authority)<sup>1</sup> to
  - help maintain normal platelet aggregation, which contributes to healthy blood flow
- Effect takes place within 1.5 hours and lasts for 12-18 hours for first dose<sup>2</sup>
- When taken regularly on daily basis, the effect is continuous
- Optimal dose in ONE easy-to-take formula
- No added preservatives
- Suitable for vegetarians



#### The Effect of Platelet Structure on Blood Circulation

Platelets are vital in clotting when the blood vessel is damaged or injured through hemostasis. However, platelets can become abnormally active by morphing their shapes from discs (smooth platelets) to spiny spheres (spiky and sticky platelets) regardless of injury due to several factors\*, causing them to stick together and form unwanted blood clots that can lodge in the arteries and veins.

Excessive blood clot formation can lead to poor blood circulation and subsequently will cause life-threatening diseases such as cardiovascular diseases that include stroke, heart attack, deep vein thrombosis and etc.

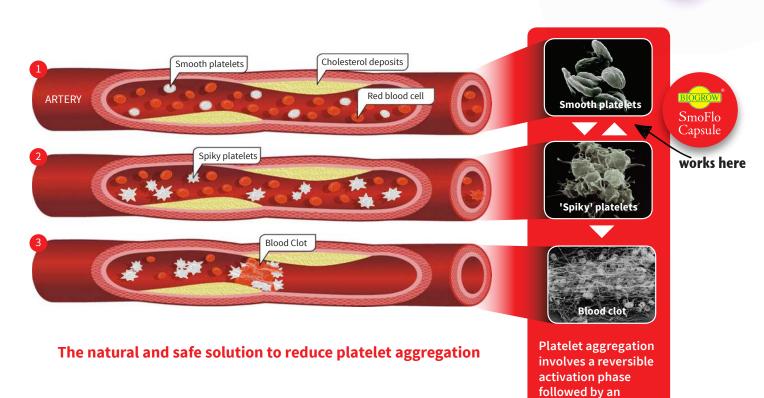
## \*Factors that may cause platelets to become abnormally active (spiky and sticky platelets) without injury



## Biogrow SmoFlo Capsule – A Breakthrough Natural Dietary Supplement for Healthy Blood Circulation

**Biogrow SmoFlo Capsule** contains **natural water-soluble tomato extract** which consists of a number of bioactive compounds such as nucleosides, polyphenols and flavonoids found only in the jelly of tomato seeds of sun-ripened tomatoes.

Numerous clinical studies have shown that the natural water-soluble tomato extract contributes to normal platelet aggregation by keeping platelets in a 'smooth' state to avoid aggregation and blood clot (thrombus) formation in the blood vessels in the absence of injury. The effect of natural water-soluble tomato extract is REVERSIBLE; therefore, it has been shown to have NO ADVERSE EFFECT on the normal blood clotting process required following injury or cut.





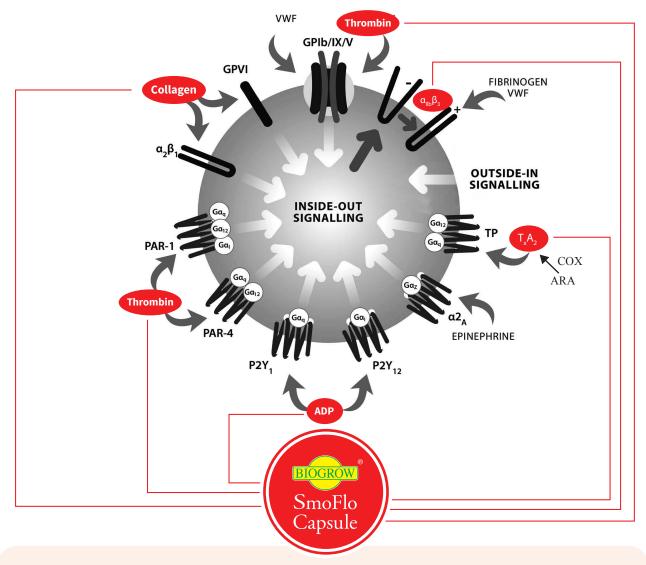
The **natural water-soluble tomato extract** used in **Biogrow SmoFlo Capsule** is the first nutraceutical ingredient with a function health claim **approved by the European Food Safety Authority (EFSA) which states:** 

irreversible aggregation stage

"Helps maintain normal platelet aggregation, which contributes to healthy blood flow."

### Biogrow SmoFlo Capsule Acts on Multiple Activation Pathways

#### Main platelet receptor-ligand interaction

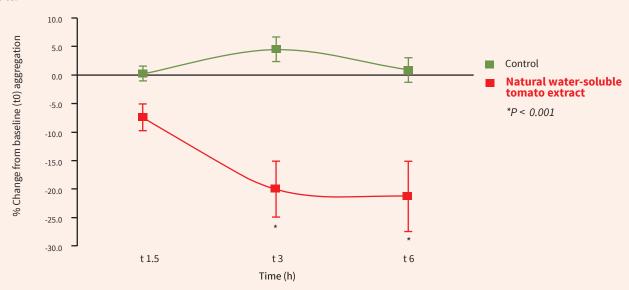


- The **natural water-soluble tomato extract** in **Biogrow SmoFlo Capsule** works on multiple aspects of the initial clotting mechanism, involving reduced expression of platelet surface glycoprotein receptor  $(\alpha_{llb}\beta_3)$  as well as affecting Adenosine Diphosphate (ADP), Collagen, Thrombin and Thromboxane  $(T_xA_2)$ -mediated signalling in order to affect intergrin activation and subsequent fibrinogen binding.
- it is known as potent inhibitor of agonist-induced platelet aggregation and thrombus formation.
- The acute effect takes place within 1.5 hours and lasts for 12-18 hours for first dose<sup>2</sup>. When taken regularly on daily basis, the effect is continuous.
- The effect of natural water-soluble tomato extract is reversible. Therefore, it has been shown to have NO ADVERSE EFFECT on normal blood clotting for the healing of wound.

#### The Effect of Supplementation with Natural Water-Soluble Tomato Extract on the Platelet Aggregation Induced by Adenosine Diphosphate (ADP) over 7-h Period<sup>2</sup>

Study design: A single-blinded Intervention on period: 7-h period

Subject: 23 **Result:** 



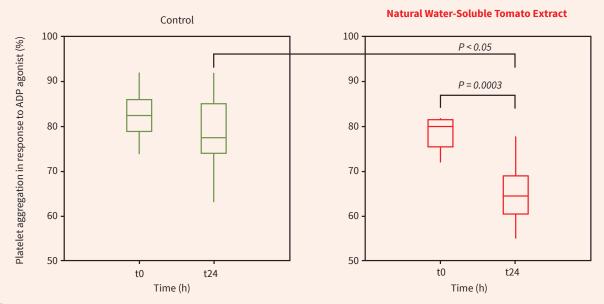
Conclusion: Adenosine Diphosphate (ADP)-induced platelet aggregation was significantly lower than baseline values after supplementation with natural water-soluble tomato extract but not after supplementation with the control drink.

#### Effect of Natural Water-Soluble Tomato Extract on Platelet Aggregation in Response to Adenosine Diphosphate (ADP) agonist<sup>3</sup>

Study design: Double-Blind Placebo-Controlled Clinical Trial

Intervention on period: 24-h period

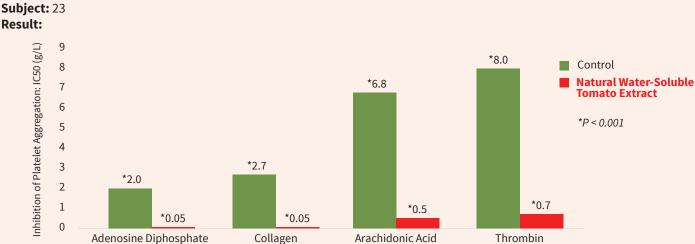
Subject: 12 **Result:** 



Conclusion: Consuming 150mg of natural water-soluble tomato extract significantly reduced the platelet aggregation response at t24 from baseline level t0.

#### Inhibition of Agonist-Induced Platelet Aggregation (Adenosine Diphosphate – ADP, Collagen, Arachidonic Acid & Thrombin) by Control & Natural Water-Soluble Tomato Extract<sup>2</sup>

Study design: A single-blinded Intervention on period: 7-h period



#### Half-maximal inhibitory concentration (IC50) values:

(ADP)

The final concentration (g/L) of test substance required in platelet-rich plasma or washed platelet suspension for inhibition of platelet aggregation by 50% under standardized conditions.



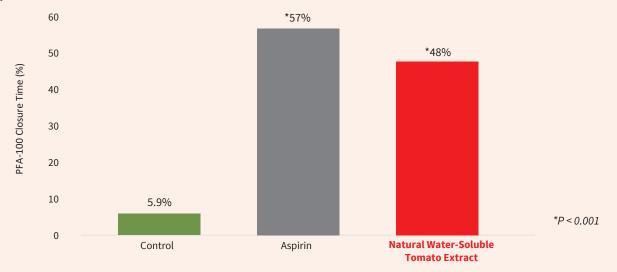
Conclusion: The agonist-induced platelet aggregations were significantly lower after supplementation with natural water-soluble tomato extract, when compared to supplementation with control.

#### Effect of Single Dose of Aspirin & Natural Water-Soluble Tomato Extract on PFA-100 Closure Time (Time to Form Primary Hemostatic Clot)<sup>4</sup>

Study design: Randomised double-blinded placebo-controlled

Intervention on period: 30 days period

Subject: 47 **Result:** 





Conclusion: A single dose of 75mg of Aspirin and 150mg of natural water-soluble tomato extract had similar effect on haemostatic function. Both Aspirin and natural water-soluble tomato extract significantly reduced the platelet aggregation response to agonist, relative to baseline and to control.

## Biogrow SmoFlo Capsule vs Aspirin

	BIOGROW®	
	SmoFlo Capsule	<b>Aspirin</b> (Antiplatelet drug)
CATEGORY	Traditional supplement	OTC product (Non-scheduled poison)
INGREDIENT	Fructus Lycopersicon Esculentum (fruitflow natural water- soluble tomato extract)	Acetylsalicylic Acid (ASA)
FUNCTION	Maintain normal platelet aggregation	Inhibit platelet aggregation
PLATELET AGGREGATION	Reversible	Irreversible
RECOMMENDED DOSAGE	1 capsule daily (150 mg of fruitflow) natural water-soluble extract)	May vary depending on the severity of health condition.
ONSET	1.5 hours	1 hour
DURATION	12-18 hours (for first dose). When taken regularly on daily basis, the effect is continuous.	4 - 6 hours
DRUG INTERACTION	No	Yes, such as NSAIDS, anticoagulant (blood thinners), certain traditional products such as gingko biloba.
SIDE EFFECTS & COMPLICATIONS	No reported side effect	Increase the risk of:  1. Excessive bleeding 2. Gastrointestinal (GI) bleeding 3. Hemorrhagic stroke 4. Dyspepsia 5. Allergic reaction 6. Aspirin resistance

## The Natural Scientifically Substantiated Solution for Healthy Blood Circulation



Each 230 mg capsule (vegetable capsule) contains

**150** mg



fruitflow Natural water-soluble tomato extract



fruitflow is a Trademark used under license from DSM

#### **Recommended dosage:**

Take 1 capsule per day together with meal.

#### Who are recommended to take Biogrow SmoFlo Capsule?



Middle-aged to older adults (aged >40)



Menopause women



Individuals with high cholesterol level, particularly LDL cholesterol level



Individuals with high blood pressure



Pre-diabetic/diabetic patients



Individuals with overweight / obese



Individuals practicing unhealthy diet



Individuals who lead an unhealthy lifestyle



Individuals with high stress level



Individuals aiming to improve/maintain blood circulation without medication

- 1. ESFA Journal 2010; 8(7) 1689.
- 2. O'Kennedy et al. Am J Clin Nutr. 2006; 84(3), 570-579.
- 3. Uddin M. et al., International Journal of Food Sciences and Nutrition 2017; 69(4), 494-502.
- 4. O'Kennedy et al. European Journal of Clinical Nutrition 2017; 723-730.

#### **Product Registration Holder:** Legosan (Malaysia) Sdn. Bhd.

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