



INFLAMEASE

Improves skin health



Melisafarm
by Pinćir family

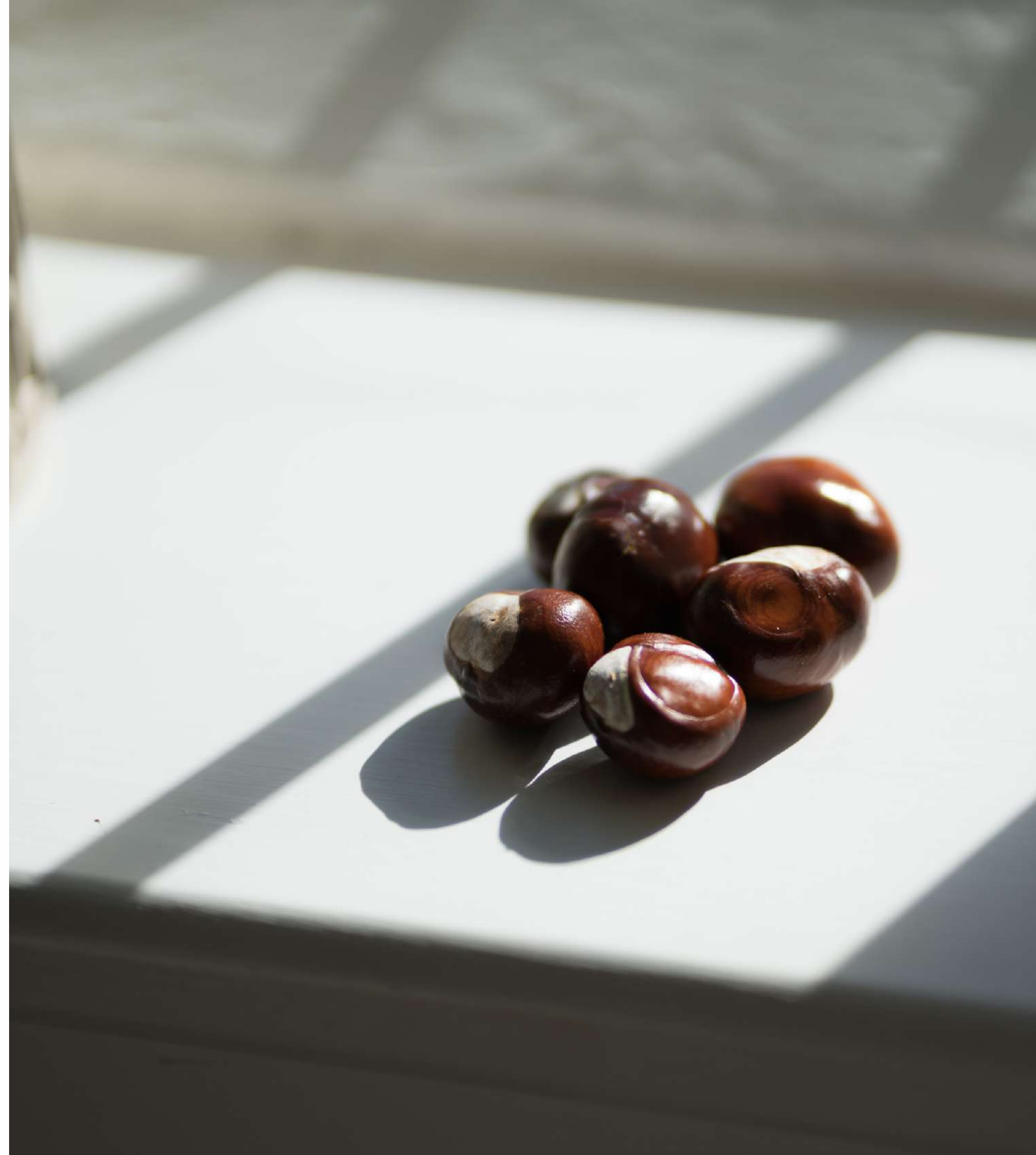
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BACKGROUND



INFLAMEASE is based on Horse Chestnut seed extract with in vivo proven benefits from Chronic Venous Insufficiency (CVI)



INFLAMEASE



Growing Demand and Modern Lifestyle

Sedentary Lifestyles:

- Prolonged sitting and lack of physical activity lead to poor blood circulation and venous problems.
- Increased prevalence of office jobs and remote work exacerbates these issues.

Prolonged Standing:

- Jobs requiring long hours of standing (e.g., retail, healthcare) contribute to varicose veins and leg swelling.





Growing Demand and Modern Lifestyle

Aging Population:

- The global aging population faces a higher risk of chronic venous insufficiency.
- Growing awareness of natural and effective treatments among older adults.

Health Consciousness:

- Rising interest in natural and herbal remedies.
- Preference for non-invasive treatments and preventive healthcare.



Diverse Potential Customer Types



Young Professionals:

Sedentary lifestyles and long hours at desks.
Seeking natural solutions for leg discomfort
and venous health.



Middle-Aged Adults:

Early signs of varicose veins or venous
insufficiency.
Interested in preventive health measures.



Active Individuals:

Athletes and fitness enthusiasts experiencing
leg swelling or pain.
Preference for natural remedies to maintain
performance and recovery.

Diverse Potential Customer Types



Healthcare Workers:

Long hours of standing lead to venous issues.
Awareness of effective, natural treatment options.



Natural Health Advocates:

Preference for herbal and non-invasive treatments.
Conscious about overall wellness and preventive care.



Elderly Population:

Higher prevalence of chronic venous insufficiency.
Seeking effective solutions to manage symptoms and improve quality of life.

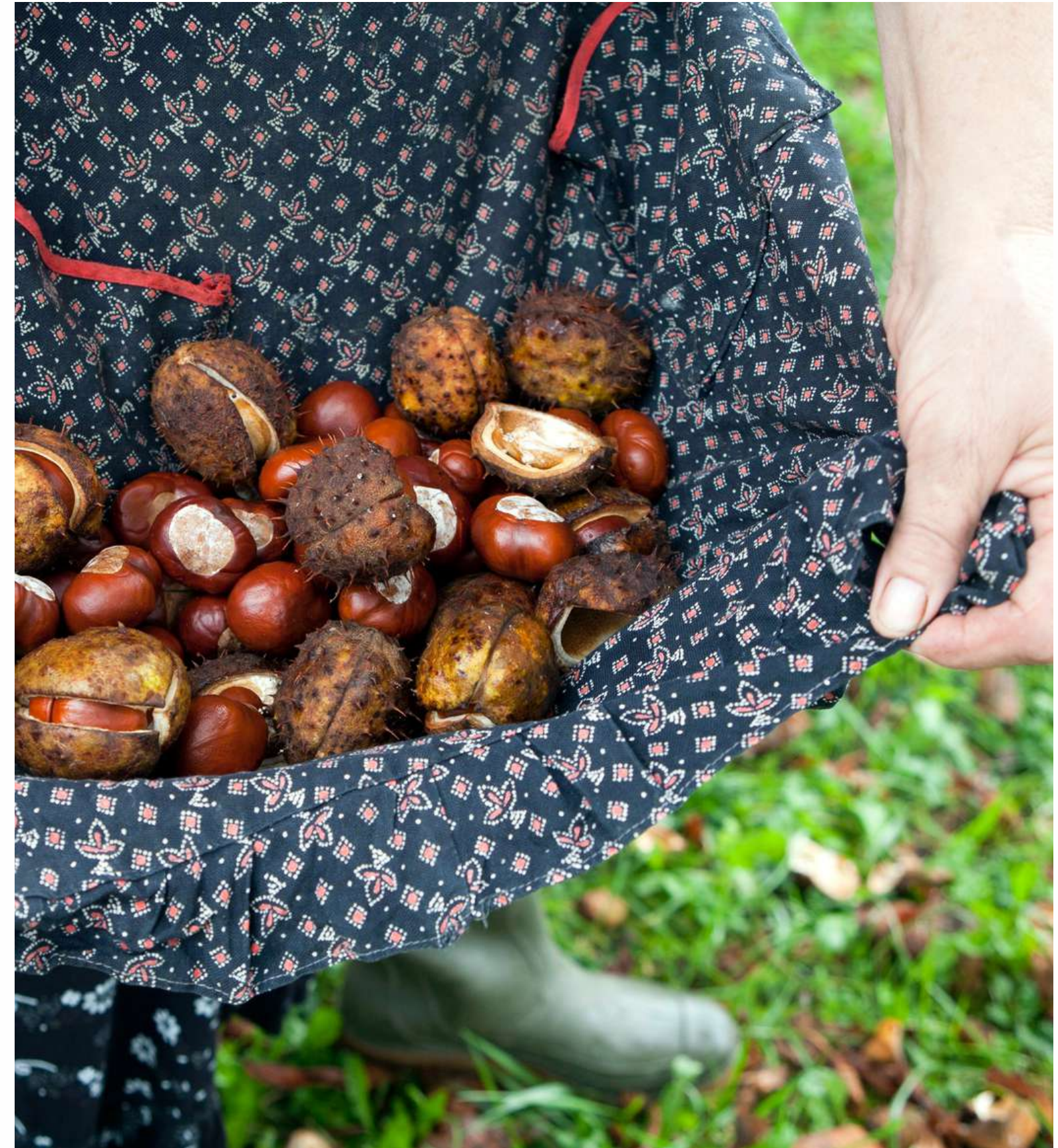


Starting raw
material



Origin of Raw Material

- **Raw Material:** Aesculus hippocastanum
- **Common Name:** Horse Chestnut
- **Procurement Type:** Wild collection
- **Crop Origin:** Serbia, Ukraine and Poland



Chemical Composition of Horse Chestnut



Aescin (Escin):

- Main active compound
- Saponin mixture
- Anti-inflammatory and vasoprotective properties

Flavonoids:

- Antioxidant properties
- Protects against oxidative stress

Coumarins:

- Enhances blood circulation
- Reduces swelling

Tannins:

- Astringent properties
- Helps in reducing inflammation and tightening tissues

Fatty Acids:

- Contributes to the extract's emollient properties

Polysaccharides:

- Provides moisturizing effects
- Supports skin health



Characteristics of Horse Chestnut



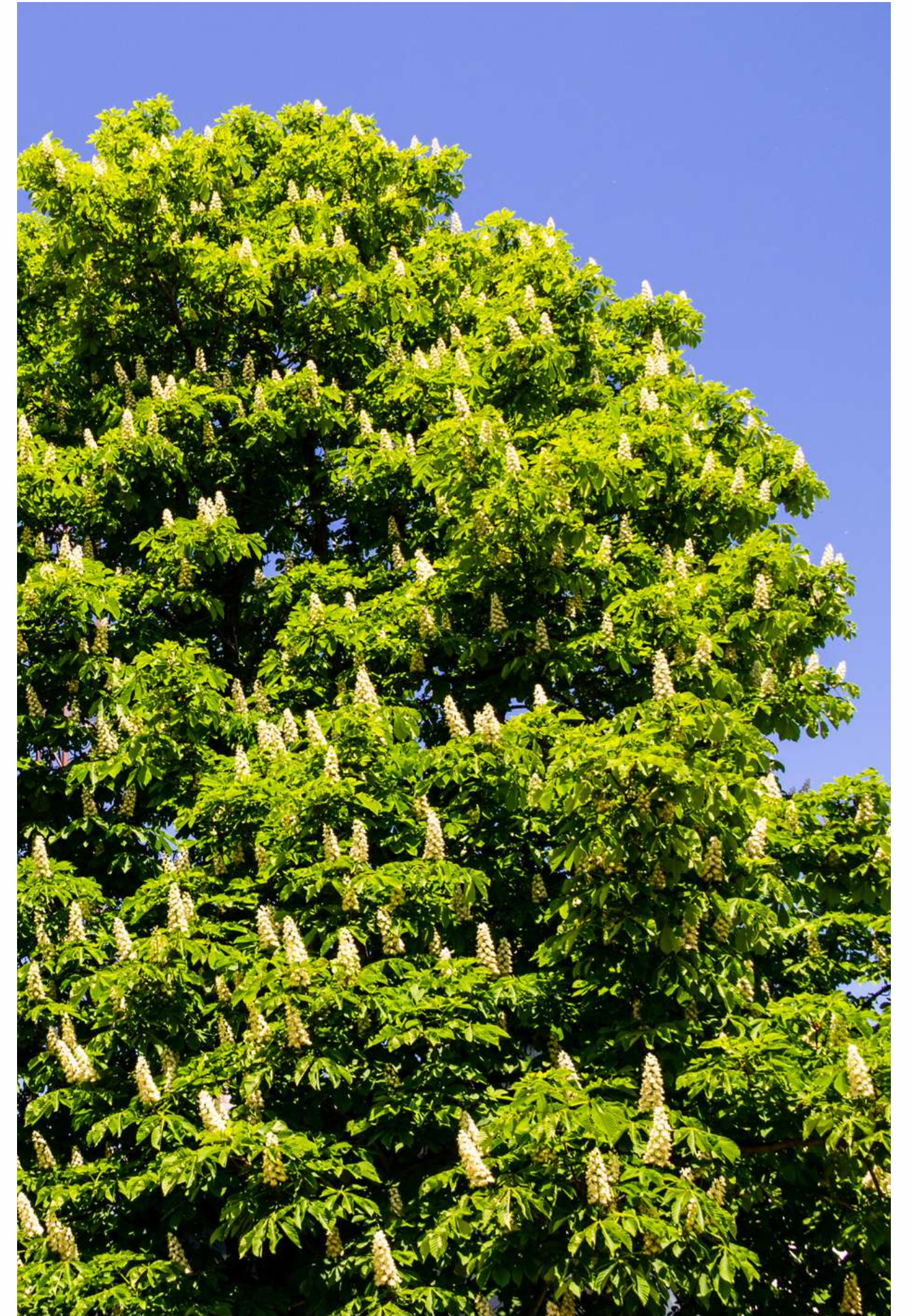
- **Anti-Inflammatory:**
 - Reduces inflammation in veins and tissues
- **Vasoprotective:**
 - Strengthens vein walls and improves blood flow
- **Anti-Edematous:**
 - Reduces swelling by preventing fluid leakage from veins
- **Antioxidant:**
 - Neutralizes free radicals, protecting cells from damage
- **Astringent:**
 - Tightens and tones tissues, reducing swelling and discomfort



Extract characteristics

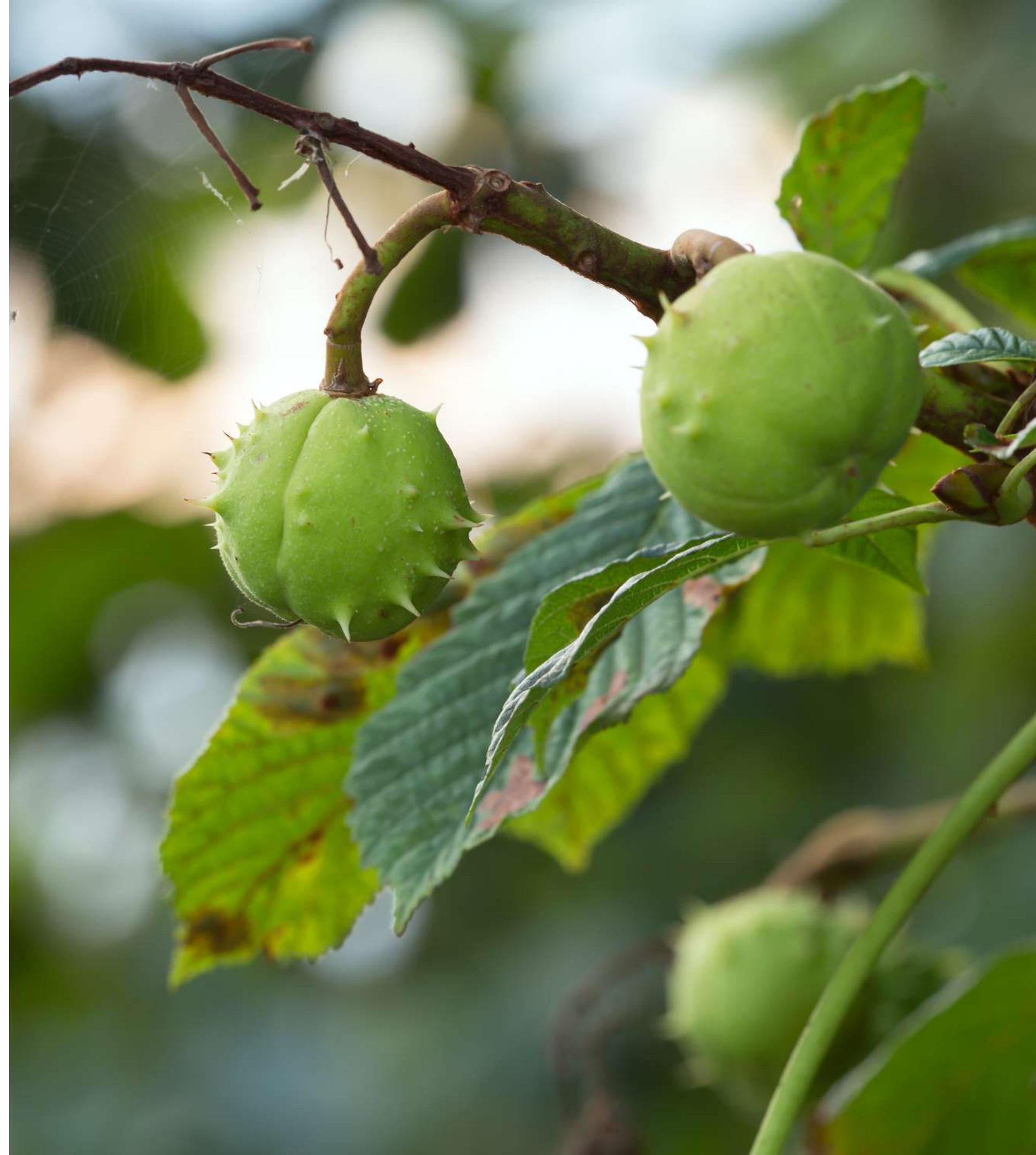


	INFLAMEASE
Product name:	Horse Chestnut dry extract
Latin name:	Aesculus hippocastanum
Part used:	seed
Extraction solvent	ethanol 60%v/v & water 40% v/v
Drug-extract ratio	5-8 : 1
Excipients	maltodextrin
Active component content	18.0 – 22.0% m/m triterpenic saponins calculated as aescin





Functional benefits





In Vivo Study:

Examination of Anti-Inflammatory Activity of
Dry Horse Chestnut Seed Extract
(INFLAMEASE) on Experimental Acute
Inflammation Model



Study design:

The carrageenan-induced paw edema model in rats is the most commonly used test for in vivo assessment of anti-inflammatory activity.

- The experiment was conducted on male Wistar rats
- Aged 6 to 8 weeks
- With an average weight of 200-230 grams
- The number of animals in the experimental and control groups was $n=6$
- In the experimental group, a herbal product was tested in three doses: 50, 100, and 200 mg/kg orally (p.o.)
- In the control groups, the drug indomethacin (8 mg/kg) was administered.



How INFLAMEASE work?

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M. Dudek-Makuch, E. Studzińska-Sroka / *Revista Brasileira de Farmacognosia* 25 (2015) 533–541

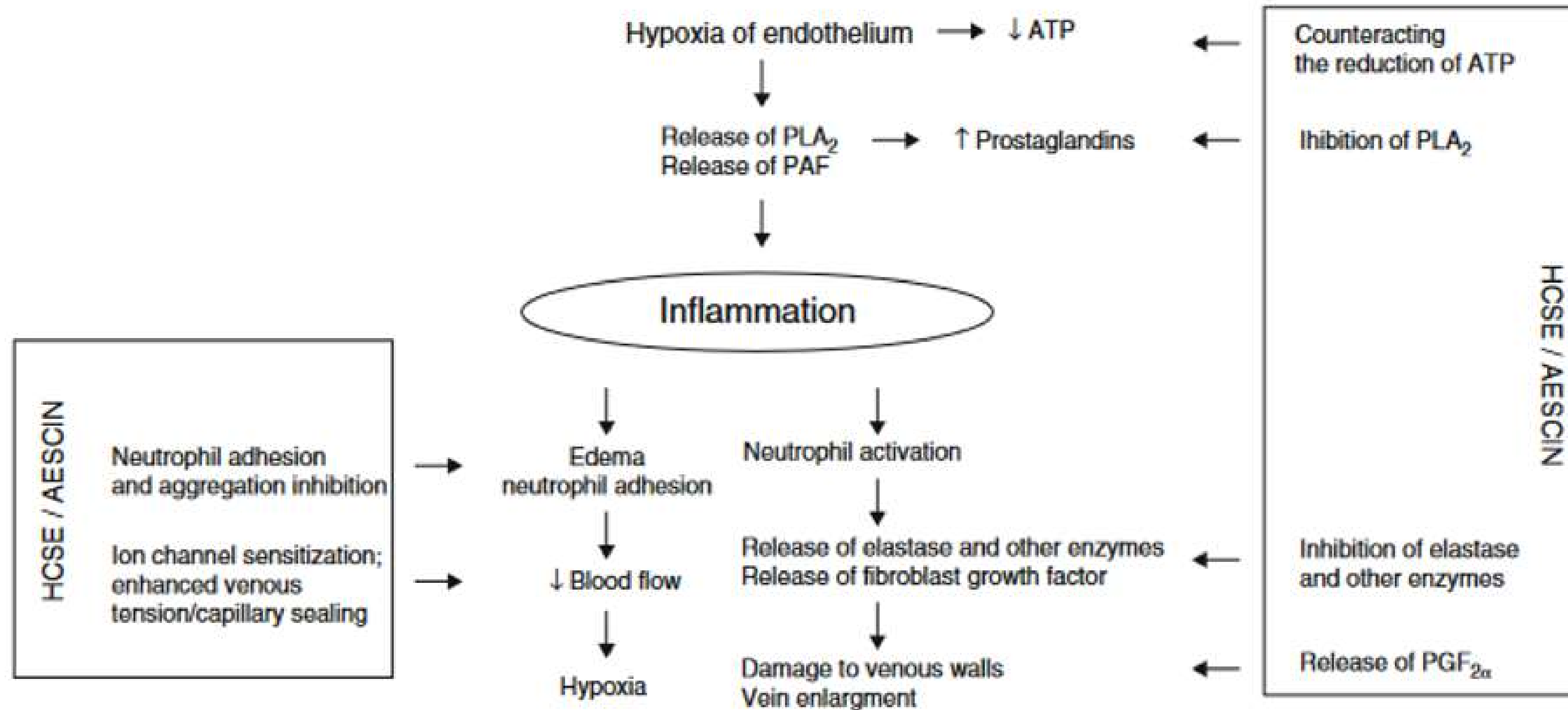
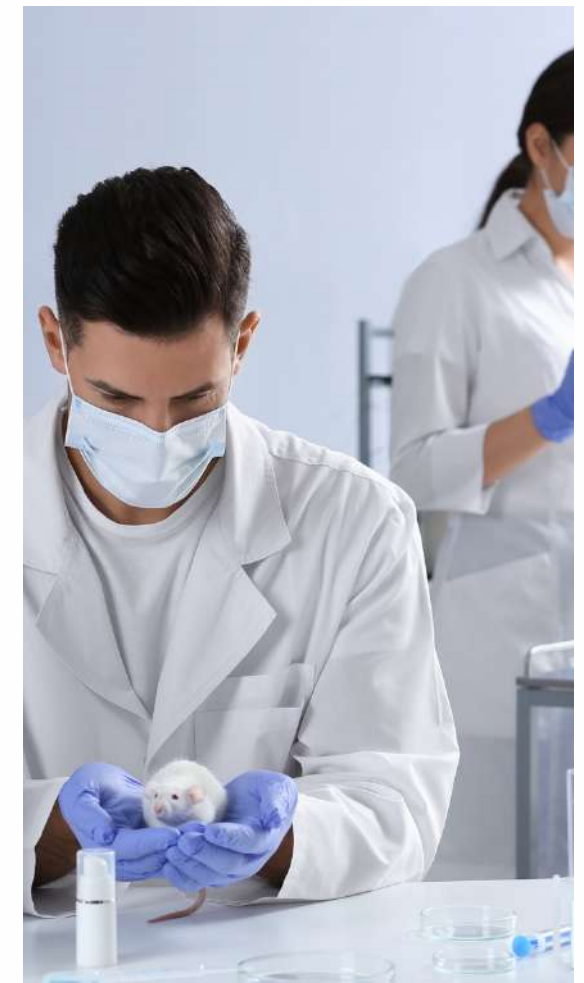
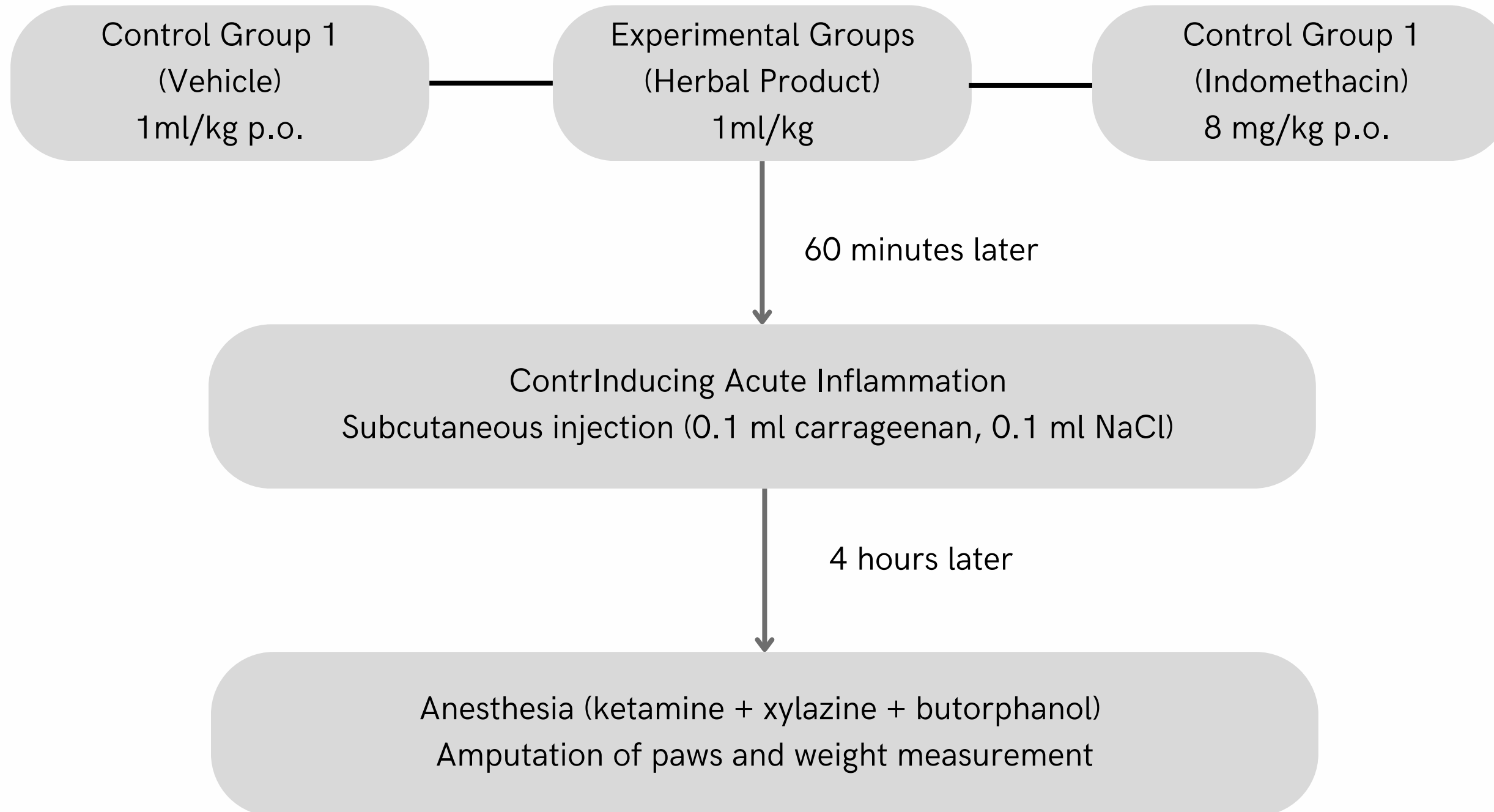


Fig. 1. Mechanisms of HCSE/aescin activity in chronic venous insufficiency. Modified based on [Sirtori \(2001\)](#).

Experimental scheme



Subjects:

- Male Wistar rats, aged 6-8 weeks, with an average weight of 200-230 grams.
- Number of animals per group: N = 6

1. Group Formation

- Control Group 1: Vehicle (placebo), 1 ml/kg orally (p.o.).
- Experimental Groups: Herbal product, three doses (50, 100, and 200 mg/kg orally).
- Control Group 2: Indomethacin, 8 mg/kg orally (p.o.).

2. Application of Preparations

- Control Group 1: Vehicle, 1 ml/kg p.o.
- Experimental Groups: Herbal product (50, 100, and 200 mg/kg p.o.).
- Control Group 2: Indomethacin, 8 mg/kg p.o.

3. Inducing Acute Inflammation

- 60 minutes after oral administration of the preparations:
 - Subcutaneous injection of the following solutions:
 - 0.1 ml of 0.5% carrageenan solution.
 - 0.1 ml of 0.9% NaCl (sodium chloride) solution.

4. Post-Inflammation Observation

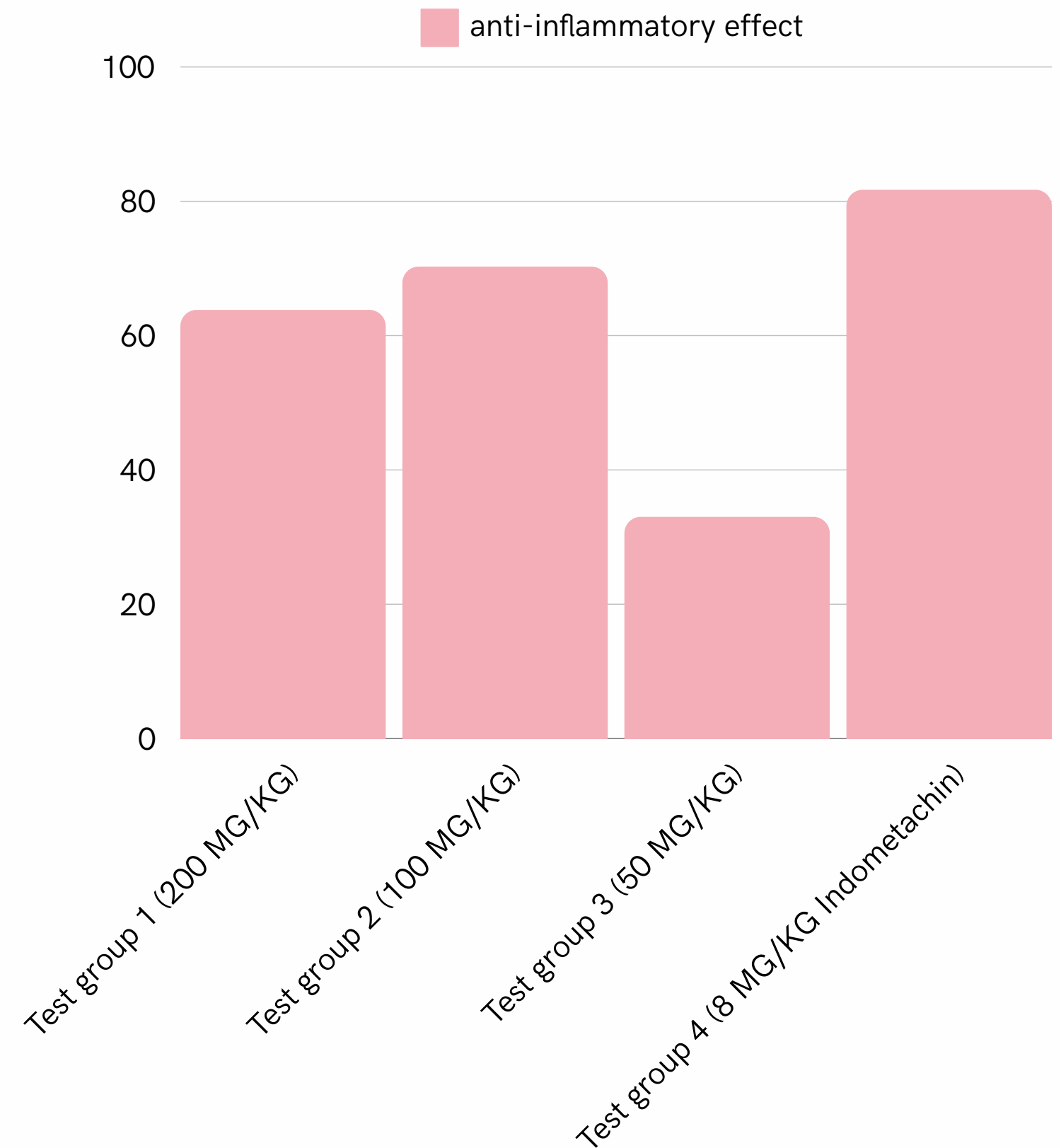
- 4 hours after inducing inflammation:
 - Anesthetize the animals using a combination of ketamine and xylazine (90 ± 10 mg/kg intraperitoneally), with additional analgesia provided by butorphanol (0.1-0.5 mg/kg intramuscularly) to minimize suffering.
 - Amputate the paws at anatomically defined points and measure the paw weight using analytical scales.



Results of Testing Anti-Inflammatory Activity of Dry Standardized Horse Chestnut Seed Extract

	Δm (g)	STDEV	% Inhibition
Control Group 0	0.325	0.0817	0
Test group 3 (50 mg/kg)	0.117	0.0625	33,01
Test group 2 (100 mg/kg)	0.097	0.0502	70,28
Test group 1 (200 mg/kg)	0.218	0.0362	63,83
Test group 4 (8 mg/kg indometacin)	0.059	0.0364	81,72

The relationship between the applied dose and the anti-inflammatory effect of the dry standardized horse chestnut seed extract and indomethacin, shown as the percentage of edema inhibition (%).





SUMMARY



Summary: Conclusion

Objective:

- To evaluate the anti-inflammatory and anti-edematous effects of dry standardized horse chestnut seed extract in a carrageenan-induced paw edema model in rats.

Key Findings:

- The extract demonstrated a dose-dependent anti-inflammatory effect.
- Significant edema inhibition observed at all tested doses:
- 33.01% at 50 mg/kg p.o.
- 70.28% at 100 mg/kg p.o.
- 63.83% at 200 mg/kg p.o.
- Extract doses of 100 and 200 mg/kg were as effective as indomethacin (8 mg/kg p.o.).



Summary: Conclusion

Human Equivalent Doses (HED):

- 0.5 g p.o. (corresponds to 50 mg/kg in animals)
- 1.0 g p.o. (corresponds to 100 mg/kg in animals)
- 2.0 g p.o. (corresponds to 200 mg/kg in animals)

Clinical Relevance:

- Well-documented clinical efficacy and safety of dry ethanol extract at a daily dose of 100 mg triterpene glycosides (as escin).
- Meta-analysis of 17 clinical studies supports its use in alleviating chronic venous insufficiency (CVI) symptoms: edema, pain, itching.

Conclusion:

- Given its significant anti-edematous and anti-inflammatory effects, the tested standardized horse chestnut seed extract could be recommended for relieving CVI symptoms, such as swollen legs, varicose veins, heaviness, pain, fatigue, itching, tension, and cramps.





Thank You!