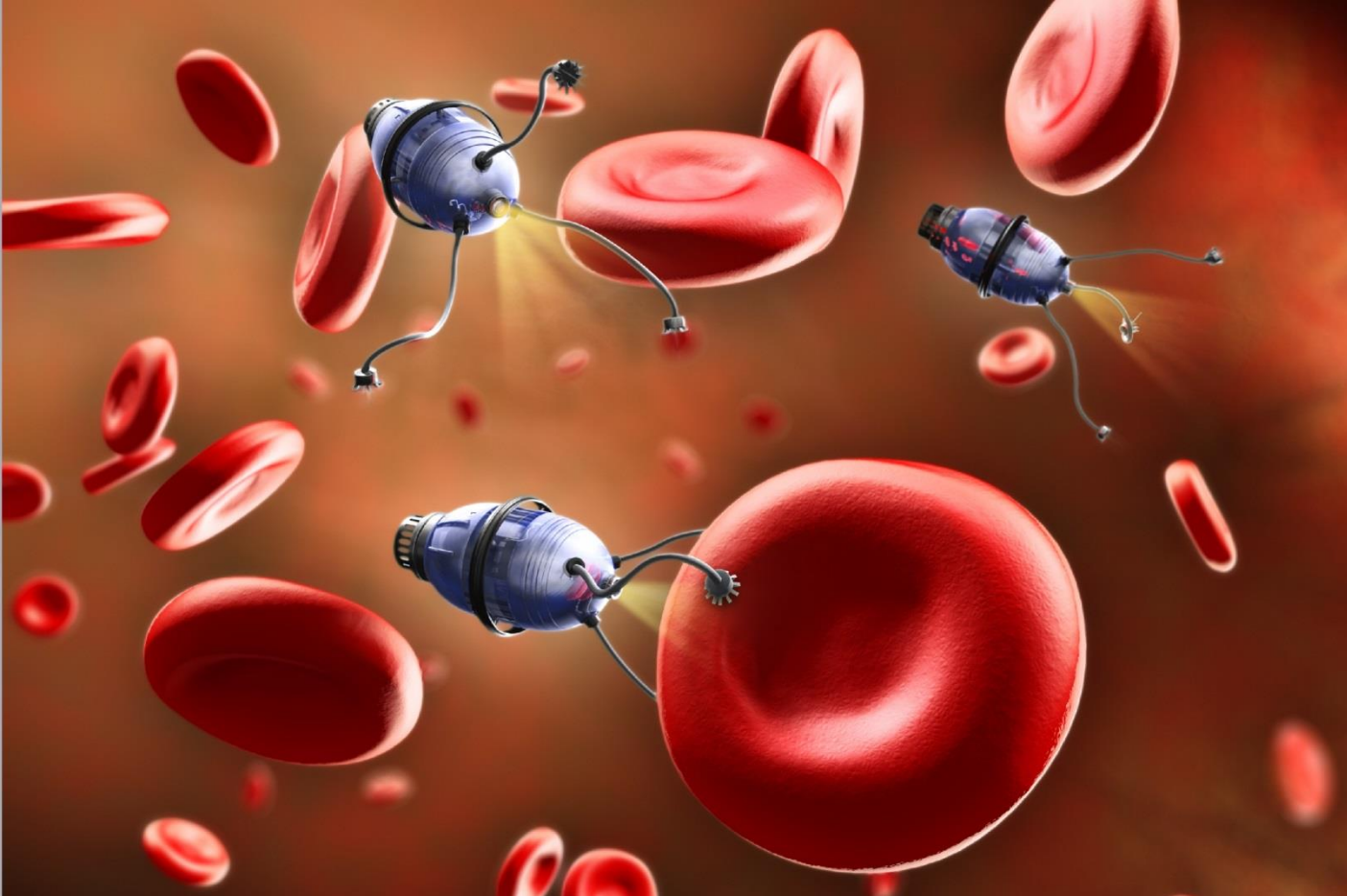


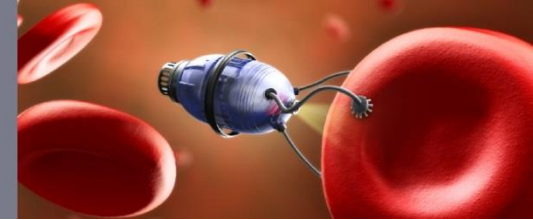
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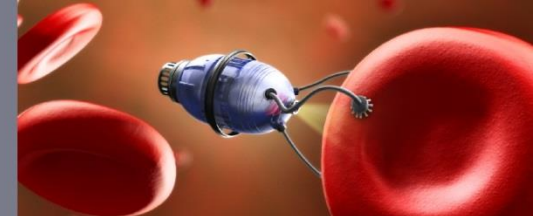
## Escin derivatives for cosmetic applications



- *Escin: a potent antioxidant, has been reported to have anti-inflammatory, anti-edematous and venotonic effects.*
- ☒ traditional herbal drug
- ☒ found in numerous OTC pharmaceutical preparations
- ☒ used as a phlebotropic drug
- ☒ a potential treatment for chronic venous insufficiency and capillary blood vessel leakage

**Evidence exists to suggest that the pharmacological effects of natural escins can be improved upon by synthetic derivatization.**

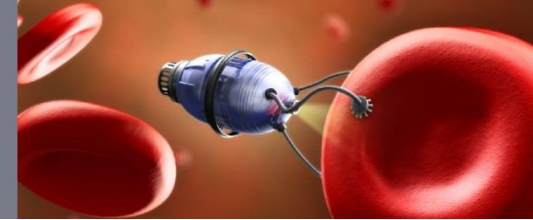




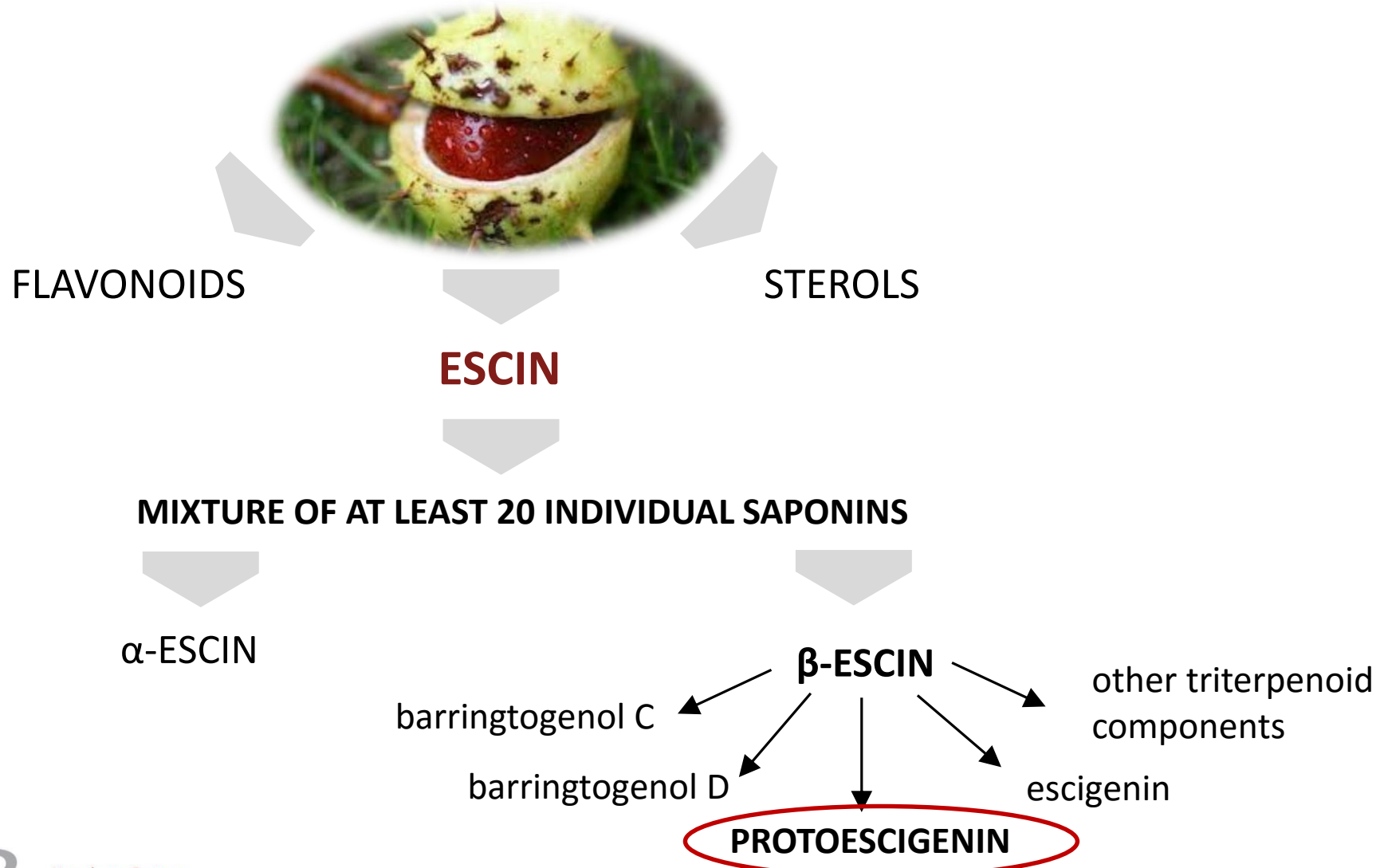
## ■ *Potential applications of escin derivatives*

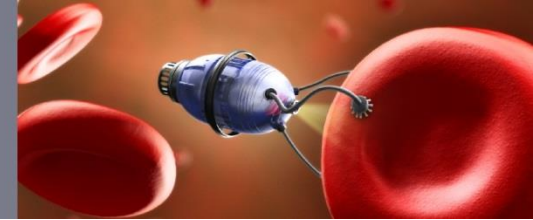
Inflammatory skin conditions including:

- allergic eczema
- atopic dermatitis
- psoriasis
- rosacea



■ *Natural escin: a complex mixture of „saponins” found in horse chestnuts*



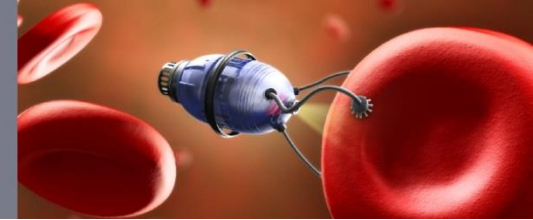


## ■ *Background to the opportunity*

- $\beta$ -escin consists of approximately 80 different saponins (derivatives of protoescigenin)
- The individual compounds cannot be synthesized on industrial scale due to high costs and low yields
- Technology for efficient production of protoescigenin from  $\beta$ -escin has been developed
- This opens new opportunities for semi-synthetic protoescigenin derivatives



**IP Position: the synthesis is protected by a patent application and exemplified through the production of 40 semi-synthetic protoescigenin derivatives**



## ■ *The opportunity*

An unique opportunity to develop new medicine and skin-care products.

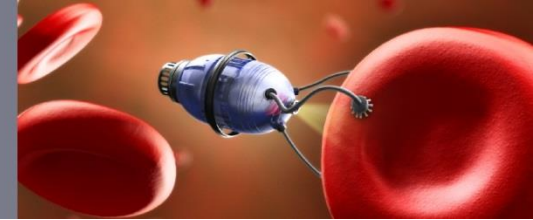
This is based on the well-established strategy of developing synthetic analogues of traditional herbal products. Up to date this has not been achieved for  $\beta$ -escin.

### Medicine

- Venous insufficiency
- Vein varicose
- Restless legs syndrome
- Inflammatory disorders
- Hemorrhoids
- Allergies such as: skin allergy, allergic asthma, allergic contact dermatitis and passive cutaneous anaphylaxis
- Oedema

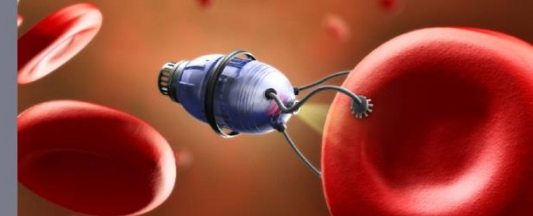
### Skin-care products

- Anti cellulite
- Anti-inflammatory
- Anti-oxidative
- Anti-aging
- Brightening
- Reduction of capillary fragility
- Anti-oedema
- Reduces fine lines and wrinkles



## ■ *Proof of principle*

- Technology for efficient production of protoescigenin from  $\beta$ -escin has been developed
- Anti-inflammatory activity of protoescigenin confirmed in vitro
- Activity and safety initially confirmed on animal model of Parkes-Weber syndrome

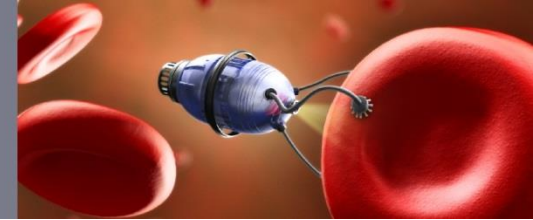


■ *Inventor*



Product invented by scientist works at Medical University of Warsaw, Poland





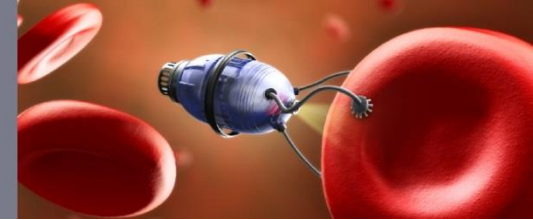
## ■ *Commercial expectations*

LSBC is seeking a licence for the IP

The headline terms of the licence are:

- Exclusive
- Up front payment
- Annual fee - % of gross revenues
- Terms around territories to be agreed





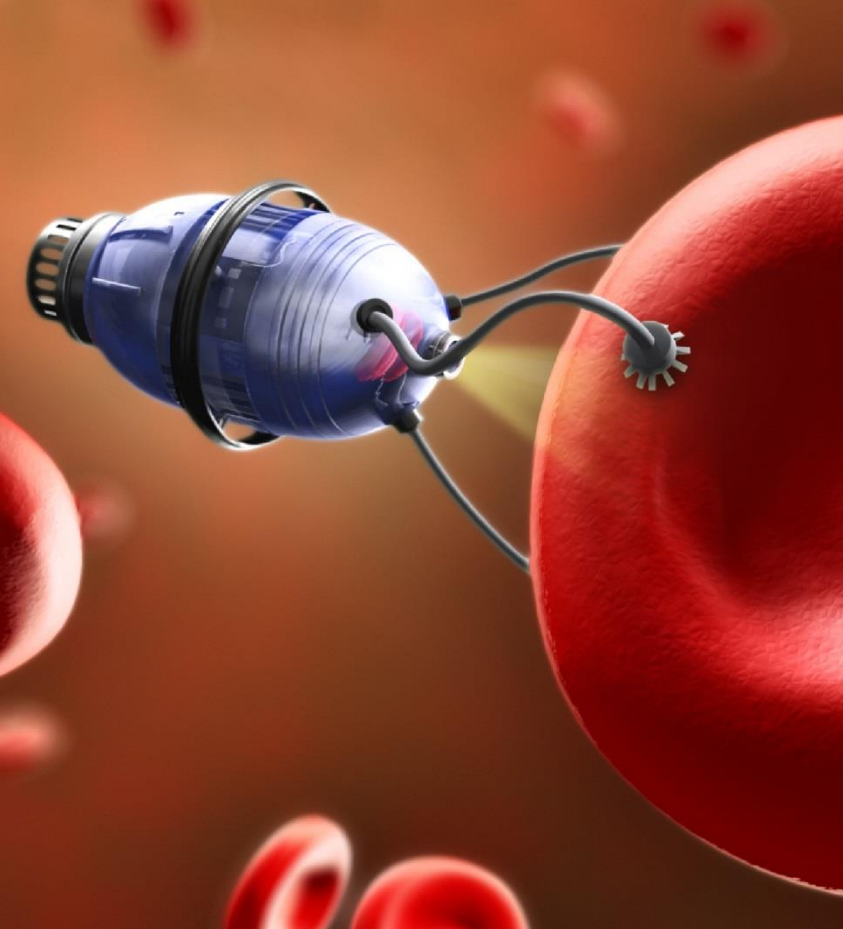
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Thank you