

# Hyperpigmentation: Light-regulated drugs as novel depigmenting treatment for human use

## Challenge

Humans are submitted to an intense induction of pigmentation in the skin due to the activation of melanogenesis by the ultraviolet (UV) light of the sun. Sometimes this process occurs in the form of dark patches (**lentigo**), a condition known as hyperpigmentation that can appear in the youth or in the elderly and it is a benign process.

The effective treatment of hyperpigmentation is a difficult challenge for dermatologists and patients.

## Market

The global hyperpigmentation treatment market is expected to reach USD **732.1 million** in 2028 due to new treatment options and technologies. Major treatment types in the market are topical drugs, laser therapy, chemical peels, phototherapy, and microdermabrasion.

Our compounds also appeal skin whitening market, cosmetic products, or services to reduce the amount of melanin, or pigment, in the skin to make it appear lighter. The global skin whitening market is projected to increase to USD 11.8 billion by 2026. Skin whitening products are available in numerous forms such as soaps, lotions, creams, and pills.

## Asset

Dr. Pau Gorostiza created technologies of photo-switchable small molecules and peptides with his team by using light to activate compound that **inhibit melanogenesis**, so that its depigmenting action is enhanced when exposed to UV light. This approach seems an appropriate strategy to solve one of the challenges in the treatment of hyperpigmentation, rather than slowing down natural sun-induced melanogenesis and hyperpigmentation. The new product will use sunlight to induce depigmentation.

## Asset Value

The proposed compounds would be the first target specific photo treatment that is marketed for cosmetic applications.

Institute for Bioengineering of Catalonia (IBEC) is a research centre of excellence set up to conduct interdisciplinary research at the cutting edge of knowledge in the bioengineering field. Dr. Pau Gorostiza, group leader at IBEC, has a longstanding experience in photopharmacology for basic research purposes and as a treatment for different pathologies or conditions. His team is in regular contact with industry experts to discuss the proration of this project.



Institute for Bioengineering of Catalonia



## Light-activable depigmenting treatment



## Uses

- ❖ Lentigo
- ❖ Hyperpigmentation

## Team

Pau Gorostiza - Scientific Leader  
Asli Raman - Tech Transfer Manager  
Eduardo Salas - Head of Tech Transfer

## Stage of Development

- Drug design and synthesis ready
- In vitro characterisation completed (small molecule and peptides)
- In vivo safety and efficacy assays in pigmented zebrafish completed with positive results (small molecule)
- Market ready within 12 months

## Regulatory Path

OTC

## Intellectual Property Status

IP strategy under development

## Exploitation Plan

Licensing

## Contact

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