

# Alternatives to hydrogen peroxide for hair lightening

## Background

The widespread use of hydrogen peroxide in bleach formulations has established it as the industry standard for oxidative bleaching in hair care. However, this process is notably aggressive, leading to hair damage, including breakage, loss of natural texture, and diminished hair health. This issue not only affects consumer satisfaction but also poses challenges for professionals in the beauty and personal care industry, who are increasingly seeking safer, more sustainable alternatives. There's a growing demand for innovative bleaching technologies that can achieve desired results without compromising hair integrity.

## What we're looking for

We are looking for a solution to lighten hair with the same level of lift as our current lightening powders containing hydrogen peroxide, but without a significantly lower amount of hair damage and thus a reduced need for additional repair ingredients.

### Our must-have requirements are:

- Can lighten hair effectively with less damage than using current systems using persulfates and hydrogen peroxide
- Potential to meet EU regulations, including no animal testing
- Safe ingredients (preferably capable of receiving compliance with REACH regulations)
- No adverse interactions with heavy metals

### Our nice-to-have requirements are:

- Even toning without uneven coloration
- Free from strong or unpleasant odors
- Non-staining formulation
- Achieves a minimum of 3 levels of lift, ideally up to 9
- No irritation on scalp
- Simple application process

## What's out of scope:

- Ultraviolet applications
- Ultrasonic applications
- Enzymatic solutions

## Acceptable technology readiness levels (TRL): Levels 3-7

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

## What we can offer you

### Eligible partnership models:

- Co-development
- Licensing
- Supply/purchase
- Sponsored research
- Material transfer

### Benefits:

#### Sponsored Research

Funding is proposal-dependent starting with a feasibility study or proof-of-concept, up to \$100,000 with the potential for expansion based on results and opportunities.

Please contact the University of South Florida Technology Transfer office representative for submission - Roisin McNally at [rmcnally@usf.edu](mailto:rmcnally@usf.edu).