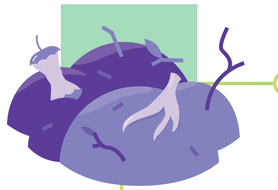
Harnessing enzymes for greener products

A European project to make industries more sustainable and environmentally-friendly

Formed by **12 partners** from a variety of sectors, RadicalZ is developing **innovative tools** for the **discovery of new enzymes** that will allow industries to use **bio-based ingredients** and produce **less waste**. With these technologies, Europe will progress in its sustainability goals towards a **carbon-neutral bioeconomy**.



Biobased ingredients

Avoiding oil-based raw stuffs

The newly discovered enzymes will enable the use of **natural raw materials**, such as **plant waste** or fat, to create greener products.

Consumer products

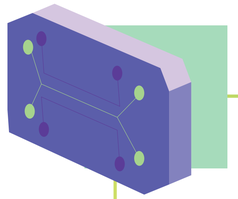
Assessing the new tools

The technologies will be tested by developing **three use-cases** using new enzymes and biobased ingredients.

Laundry products

Cosmetics

Nutraceuticals



Screening instruments

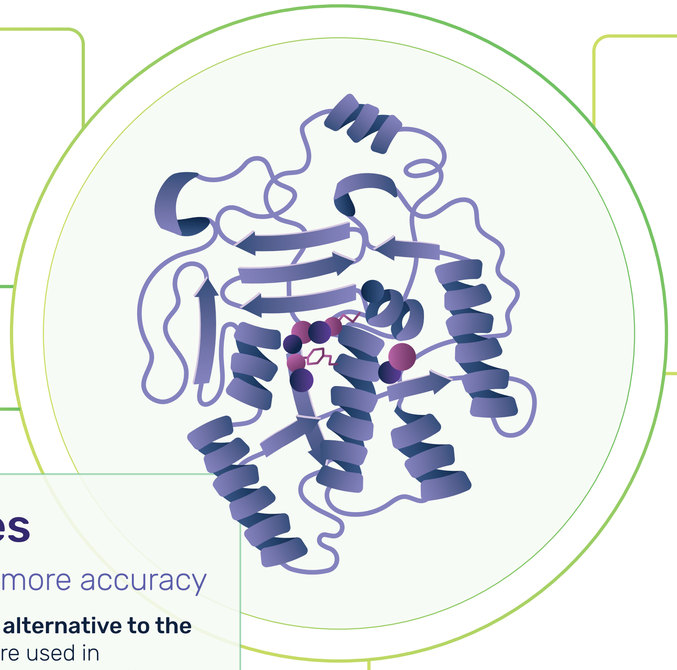
Cheaper methods to find the right enzyme

RadicalZ is upgrading **droplet microfluidic tools** to screen through millions of samples searching for suitable enzymes **faster** and with **more accuracy**.

Faster

Affordable

Accurate



New enzymes

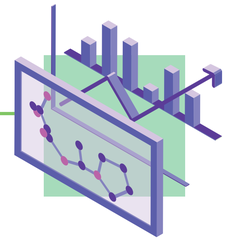
Natural proteins for more accuracy

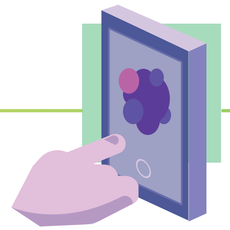
Enzymes are a sustainable **alternative to the synthetic catalysts** that are used in conventional production processes. As they are each specific for one reaction, they require **less raw material** and generate less waste.

Protein engineering

All the available data to optimize enzymes

Protein databases will be used to feed **data** to an artificial intelligence and predict upcoming approaches to modify the newly discovered enzymes.





Intuitive software

A process less dependent on experts

The team is developing **user-friendly** computer programmes that allow industries to easily transform the new enzymes to make them **optimal** for each process.

New formulations

Protecting the enzymes for more efficiency

Microfluidics will develop **tailored capsules** which compartmentalise enzymes and ingredients. This will avoid contamination, protect from **early degradation** and achieve **controlled release**.

The project in numbers

4 Years

8 Countries

12 Partners

6 Million € in funding

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement **No 101000560**