A NOVEL METHOD OF PRODUCTION OF RECOMBINANT HYPER-THERMOSTABLE CATALASE-PEROXIDASE

CUTTING EDGE TECHNOLOGY

- established Slovak university in cooperation with a Slovak scientific and research institute have developed a new production method of recombinant hyperthermostable catalase-peroxidase AfKatG
- the new production method allows relatively simple production and purification of recombinant catalase-peroxidase AfKatG by the expression of synthetic gene, modified to meet the needs of the production host
- AfKatG is **bifunctional enzyme** - shows peroxidase and catalase activity
  - the optimal conditions at pH 4.5 and 80°C for peroxidase activity
  - the optimal conditions at pH 6.0 and 70°C for catalase activity.

INDUSTRIAL APPLICABILITY

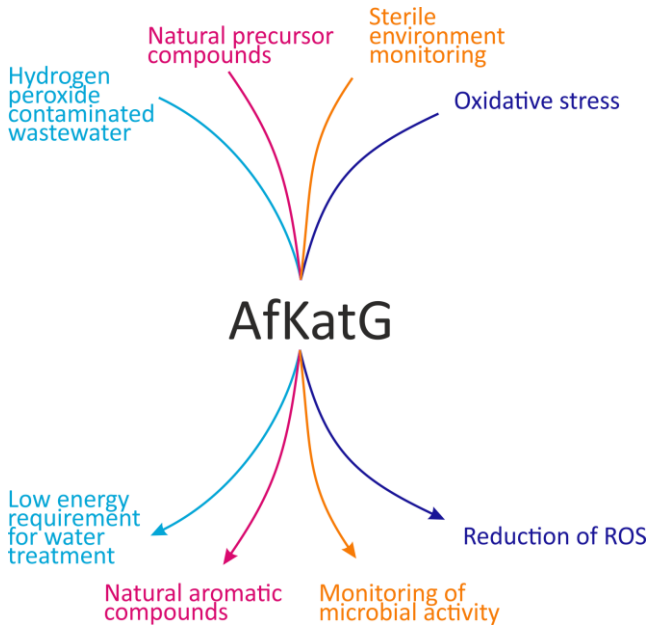
There are multiple potential applications:

- **decomposition of hydrogen peroxide** in processes, where its presence is not desired, e.g. waste water from bleaching solutions
- **oxidation of aromatic compounds**
- **protection against oxidative stress**
- **monitoring of microbial activity**

Large scale production of AfKatG allows for wide application of this enzyme with extensive heat tolerance **even during processes, where conventional enzymes cannot be used**.

The simple cultivation of the microbial producer and subsequent simple purification of the enzyme allow for **low production costs** and increase in added value of the final product.

THE INVENTORS ARE LOOKING FOR AN INDUSTRIAL PARTNER FOR LICENSING THE TECHNOLOGY.



COMPETITIVE ADVANTAGE

- **Cheap production**
- **High yields**
- **Simple and straightforward purification** of catalase-peroxidase AfKatG
- **Highly pure product**
- **Hyperthermostable enzyme**
- **Suitable for large scale production**
- **Ecological** - found in all aerobic organisms, from bacteria, archaeons and fungi to humans

STAGE OF PROTECTION AND DEVELOPMENT

- SK patent application (PP 50015-2019)
- TRL 4 – laboratory tested

FOR MORE INFORMATION PLEASE CONTACT

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The inventors use services of Technology Transfer Office of Slovak Academy of Sciences and Technology Transfer Office, Comenius University to market their invention.