

N°586 / PC

TOPIC(s) : (Chemo)enzymatic strategies

## Seed meal of *Fagopyrum tataricum* as catalyst for transrutosylation of tyrosol and hydroxytyrosol

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### PURPOSE OF THE ABSTRACT

Enzymatic synthesis using diglycosidases offer effective, environmentally friendly procedures and more convenient strategies in preparation of structured oligoglycosides. Seeds of *Fagopyrum tataricum* possess high rutosidase activity, therefore are able to transfer the whole rutosyl moiety from the donor to an acceptor in one step, while containing up to 2.4 % of rutin. Tyrosol rutoside and hydroxytyrosol rutoside were synthesised for the first time with rutosidase of this origin. First one was previously synthesised with rutosidase from *Sophora japonica* [1] and as a mixture of hardly separated isomers using rutosidase from *Aspergillus niger* [2]. Synthesis was preoptimized in terms of pH, added rutin, tyrosol and amount of catalyst in the form of defatted seed meal using HPLC analysis. The preparative reaction was then carried out under following conditions: pH 6.5, 33 mM rutin, 72 mM tyrosol and catalyst in amount 3% (w/vol.). The maximal conversion of tyrosol rutoside achieved more than 61 % (relative to rutin) and the isolated yield 35 % with purity ca. 97 %. Isolation was achieved with combination of chromatographic separation on Al<sub>2</sub>O<sub>3</sub>, Diaion HP 20 and silica gel. The rutosylation proceeds regioselectively and results in formation of only one product glycosylated on the primary hydroxyl of tyrosol (as confirmed by NMR). Hydroxytyrosol rutoside was prepared under the same conditions.

This work was supported by the Slovak Research and Development Agency under the contract No. APVV 18-0188 and by the Slovak Grant Agency for Science VEGA (grant number 2/0111/22). The work was inspired by scientific interactions that evolved within the COST Action CA20127 - Waste biorefinery technologies for accelerating sustainable energy processes (WIRE).

## FIGURES

FIGURE 1

FIGURE 2

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### KEYWORDS

rutinosidase | *Fagopyrum tataricum* | tyrosol | hydroxytyrosol

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### BIBLIOGRAPHY

- [1] Karnišová Potocká, E., Mastihubová, M., Mastihuba, V. Food Chem. 2021, 336, 127674  
[2] Bassanini, I., Krejzová, J., Panzeri, W., Monti, D., Křen, V., Riva, S. ChemSusChem. 2017, 10, 2040-2045.