

N°319 / OC

TOPIC(s) : Enzyme discovery and engineering / Industrial biocatalysis

Bacterial peroxygenases - expanding the repertoire of oxyfunctionalization enzymes

AUTHORS

Nikola LONCAR / GECCO BIOTECH B.V., AVONDSTERLAAN, 128, GRONINGEN

Lur ALONSO COTCHICO / ZYMVOL BIOMODELING S.L., C/ PAU CLARIS, 94, 3B, BARCELONA

Davide CARRARETTO / UNIVERSITY OF PAVIA, VIA FERRATA 9, PAVIA

Andrea MATTEVI / UNIVERSITY OF PAVIA, VIA FERRATA 9, PAVIA

Marco W. FRAAIJE / UNIVERSITY OF GRONINGEN, NIJENBORGH 4, GRONINGEN

Maria Fatima LUCAS / ZYMVOL BIOMODELING S.L., C/ PAU CLARIS, 94, 3B, BARCELONA

PURPOSE OF THE ABSTRACT

Due to the extremely attractive biocatalytic potential of unspecific peroxygenases (UPOs), interest in the exploitation of UPOs for biocatalytic applications is booming. This can be seen from the number of scientific publications, patents, and biotech companies that started to offer fungal UPOs. Almost without exception, all the focus concerning biotechnological exploitation of peroxygenases is indeed on already known fungal UPOs. Yet, it has been shown that also bacteria contain peroxygenases (BUPOs), carrying out the same type of reactions. Nevertheless, these bacterial counterparts have received very little attention, while they show great promise as oxidative biocatalysts. Herein, we present a discovery of a set of BUPOs that can be easily produced and therefore it is possible to study and engineer them for diverse biocatalytic applications.

FIGURES

FIGURE 1

FIGURE 2

KEYWORDS

peroxygenase | enzyme discovery | industrial biocatalysis | melanin

BIBLIOGRAPHY