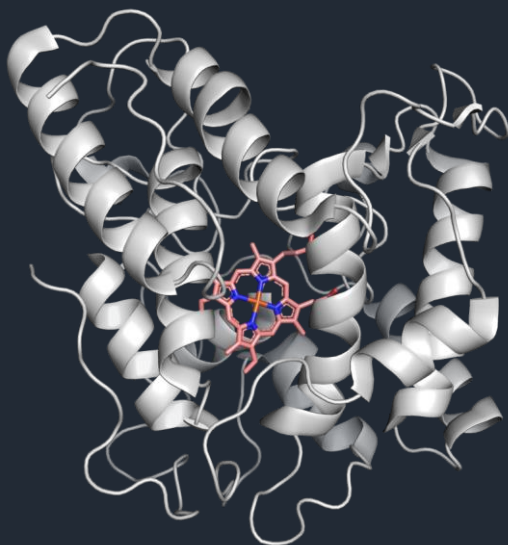


UPO

Enzyme Panel

Unspecific peroxygenases



Integrate biocatalysis into your
synthesis route!

Enzyme panel of fungal UPOs for the
Oxygenation or **Dealkylation**
of APIs and intermediates.

UPO PANEL 77

62 wild type UPOs
15 mutant UPOs
2 reactions/UPO

OXYFUNCTIONALIZATION



62 wild type
+ 15 mutant
UPOs



Broad substrate
spectrum



Free of third-
party IP



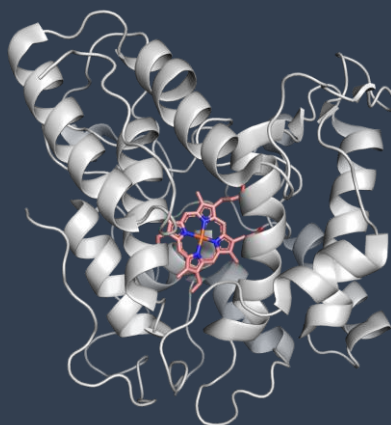
Available up to
kg scale

Enzyme info

Unspecific peroxygenases (UPOs) - EC 1.11.2.1 - are an emerging class of enzymes that can **oxyfunctionalize** a wide range of substrates, hence the name "unspecific". Reactions that UPOs catalyze include e.g. hydroxylations, epoxidations, dealkylation reactions, or heteroatom oxygenation.

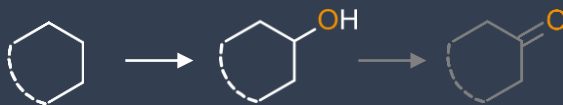
Reactions

UPOs are ideal biocatalysts for chemically challenging reactions.

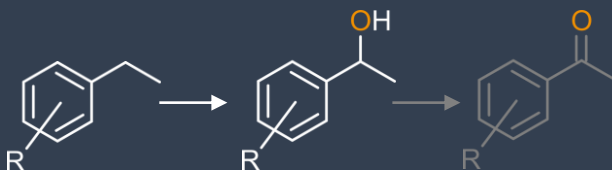
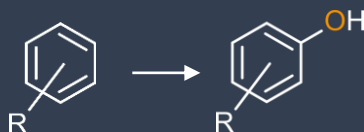


Hydroxylation*

- (Cyclo)alkanes



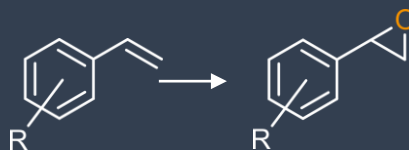
- Aromatics



* Ketone formation is achieved by overoxidation

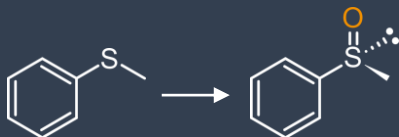
Epoxidation

- Epoxidation of C=C double bonds



Heteroatom oxygenation

- Sulfoxidation



Dealkylation

- O-Demethylation



UPOs versus P450s

UPOs and P450 enzymes catalyze similar reaction types, but UPOs display significant advantages over P450 enzymes.

Feature	P450	UPO
Size	> 100 kDa	30-42 kDa
Subunits	Yes, 1-3	No
Co-Factor	NAD(P)H, O ₂	H ₂ O ₂
Reaction Stability	-	++
Producibility	-	++
Handling	-	++
Oxygen Dilemma	Yes, up to 90% product loss	No
Reaction cost	\$\$\$	\$

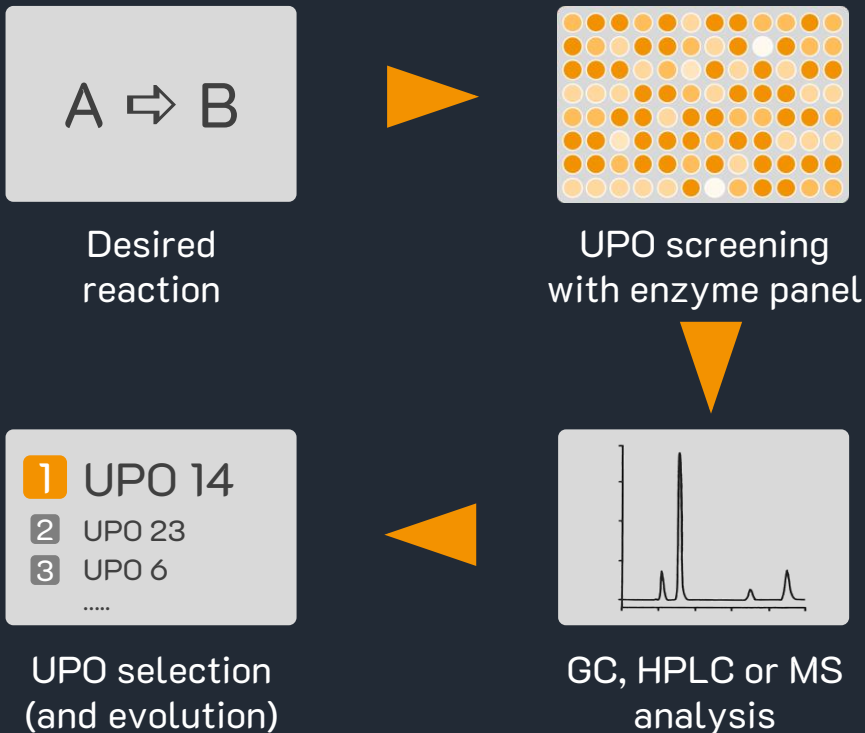
UPO challenge

In some cases UPOs may produce unwanted side products, e.g. due to overoxidation. This challenge can be overcome by fine tuning of process conditions and enzyme engineering, both offered as a service by Aminoverse.

UPO Enzyme Panel

Any biocatalytic process requires the identification of the right enzyme (biocatalyst) to carry out the desired reaction. The UPO Enzyme Panel provides access to fungal UPOs suited for biochemical conversions in a ready-to-use format.

The practical MTP format allows parallel screening of the entire UPO Enzyme Panel within minutes, followed by your GC, HPLC or MS analysis of choice.



UPO Enzyme Panel

- Overview -

UPO Enzyme Panels



UPO Enzyme Panel 77

Article No. AVUPO7700 (in stock)

- 62 wild type + 15 mutant UPOs
- Negative control
- 2 reactions per UPO

UPO Enzyme Panel Custom

Article No. AVUPOcustom (upon request)

- Customized UPO Kits for your biocatalysis screening collection
- From 100 mg/UPO onwards

UPO Enzymes

- Overview -

Individual UPOs can be requested up to kg scale



Quantity*	Lead time [weeks]
< 1 g	0 – 2
1 g	3 – 4
10 g	5 – 6
100 g	6 – 10
1 kg	10 – 40
10 kg	12 – 60

*Quantity refers to weight of UPO Enzyme Preparation = lyophilized, cell free supernatant of *P. pastoris* cell culture containing >15 % UPO

Intellectual Property

All UPO enzyme preparations contained in the UPO Enzyme Panel are patent protected and freedom-to-operate (FTO) for research use only.

Want to use UPOs commercially or take UPO production in your own hands?
Reach out to discuss commercial license options.

About UPO Enzyme Panel

The UPO Enzyme Panel was created to meet the increasing demand for efficient biocatalysts for oxyfunctionalization reactions.

Made possible thanks to our partner



Bisy GmbH
Wuenschendorf 292
8200 Hofstaetten a. d. Raab
AUSTRIA
bisy.at



Aminoverse solves enzyme challenges.

Founded in 2020, Aminoverse offers innovative enzyme products and services:

- Enzyme products and kits
Ready-to-use enzymes for proof-of-concept studies up to commercial scale, e.g. the UPO Enzyme Panel, and analyte detection kits, e.g. the Phosfinity series.
- CRO services
Discovery of enzymes, enzyme feasibility studies, engineering of enzymes by Directed Evolution and machine learning, enzyme mutant library generation.
- You need to find an enzyme for your process?
- You want to improve your current enzyme?
- Need a hand with the application of the UPO Enzyme Panel or other enzymes?

We are looking forward to hearing from you.

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