Biocatalysis at Roche: Recent Examples

Serena Bisagni[1], Steven Hanlon[1], Hans Iding[1], Filippo Sladojevich[2], Kurt Püntener[1], Rebecca Buller[3]

[1]Synthetic Molecules Technical Development, Process Chemistry and Catalysis, F. Hoffmann-La Roche Ltd, Grenzacherstrasse 124, CH-4070 Basel, Switzerland; [2]Pharma Research and Early Development, Roche Innovation Center Basel, F. Hoffmann-La Roche Ltd, Grenzacherstrasse 124, CH-4070 Basel, Switzerland; [3]Institute of Chemistry and Biotechnology, ZHAW Zurich University of Applied Sciences, Einsiedlerstrasse 31, 8820 Wädenswil, Switzerland

serena.bisagni@roche.com

Biocatalysis is increasingly becoming a fundamental tool for active pharmaceutical intermediates (APIs) synthesis in the pharmaceutical industry. Biocatalysis is routinely applied not only in the lab, but also on a large scale, to ensure the manufacturing of highly enantiopure APIs with remarkable chemical selectivity.

In this presentation, we will showcase examples from the most recent publications from the Roche Biocatalysis group.

The examples will deal with the journey of the enzymes, that are initially discovered from the screening of our collection and then they are optimised either through enzyme engineering or process parameters optimization. Finally, the enzymes are tested in chemical processes for the production of APIs, ranging from gram- to ton-scale.

Benefits of this technology will be highlighted in the context of the broader synthesis methodologies and concrete examples will be showcased.