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Application of Biocatalysis to Improve Sustainability in Industrial Production

Scarcity of natural resources and environmental pollution are nowadays ubiquitous and represent factors that threaten our planetary welfare. In this regard bio-economy which refers to all economic activity derived from scientific and industrial actions focused on biotechnology is gaining more and more importance. The scope of bio-economy is extremely broad and reaches from sustainable agriculture to the biotechnological, industrial production of artificial structures that do not occur in nature. There are two main reasons for the growing acceptance of biotechnology. One reason is that problems resulting from the increasing environmental pollution lead to a noteworthy shift in the definition of economic recoverability. Because the environmental consequential charges had not been taken in consideration in the past processes that were considered as economically viable are today no longer recognized as such. Another and probably even more important reason is that the developments in the biotech industry in the last decades lead to a tremendously large number of techniques and technologies that enable the efficient approach and resolution of scientific questions in very different fields of industry. E.g. in the past, enzyme catalyzed reactions were limited to natural substrates using natural reactions and pathways. Today, modified microorganisms are engineered to harbor non-natural pathways which lead to the production of completely artificial molecules nature does not produce itself. This makes biotechnology also attractive for industrial branches which usually are not associated with biology or ecological friendliness.

Because of these auspicious prospects many companies are looking for possibilities to benefit from biotechnology. However, to convert ideas on paper into technically feasible processes requires a high level of scientific expertise. Therefore more and more alliances are formed between SMEs that possess of a powerful high-technology in the field of bio-economy and big corporations, which have realized that their ability to compete and to sustain is dependent on a successful change from fossil resource-based to sustainable resource-based creation of value. With its proven technology for biocatalyst and biocatalysis optimization evocatal is serving as a reliable partner for considerable companies from very different industries, e.g. pharma, food, flavors & fragrances, textile and construction. Starting with a strong focus on pharma industry and the production of chiral API intermediates we have broadened our scope and are supplying efficient and at the same time ecologically friendly solutions for challenges in the synthesis of all kinds of fine and specialty chemicals.

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