Transformative Products Toward a Sustainable Future

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The tremendous increase in the amount of protein structural information acquired during the past four decades has opened new avenues – first and foremost for the detailed understanding of protein function at the molecular level. The rational, structure-based engineering of proteins–as opposed to purely stochastic and experimental methods such as directed evolution–is now a possibility for a wide variety of proteins and enzymes of scientific and industrial interest. Among the techniques employed for rational protein engineering, computational protein design (CPD) is a relatively recent approach aimed at combining physical chem- istry models governing amino acids and protein structure with advanced compu- tational algorithms to automate the task of redesigning protein sequences, to alter their structure, and to impart them with new function(s).

Arzeda is creating new solutions for today's most pressing global needs by applying novel computational methods to design and rationally engineer enzymes with activities towards non-native substrates and non-existing reactions. By combining these novel enzymes into a metabolic pathway we develop Designer Cell Factories to produce new bio-based chemicals. The efficiency and wide applicability of our technology was demonstrated through successful partnerships with the leading industrial companies, among them INVISTA, DuPont as well as international food, animal feed, and health and nutrition companies.