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Almac's INSIGHTTM: From Genes to GMP

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PURPOSE OF THE ABSTRACT

Almac's INSIGHTTM: From Genes to GMP

Biocatalysis offers a sustainable approach to chemical and GMP API manufacture, however the processes involved in traditional enzyme selection and screening can be resource heavy and limited to currently available sequenced genomes. Almac's INSIGHTTM platform streamlines enzyme discovery, engineering and development. The initial step of INSIGHTTM involves smart enzyme discovery which utilises molecular modelling tools, machine learning, and bioinformatic algorithms to mine available and/or customer proprietary metagenomes. This allows for the identification of genes to subsequently build a panel of highly specific and selective enzymes. Following this, INSIGHTTM protein in-silico design approaches are employed to improve enzyme activity, selectivity and/or stability, with a targeted approach towards the needs of the customer. Selected panels of enzymes are subsequently cloned, expressed and screened in vitro for the reaction of interest. Additional offerings from Almac's INSIGHTTM program includes a range of proprietary expression systems and hosts with the potential to improve the levels of soluble expression and activity of recombinant proteins. INSIGHTTM is focussed on development of better enzymes to be deployed in a cornucopia of reaction types. INSIGHTTM can be deployed from Gene to GMP.

FIGURES

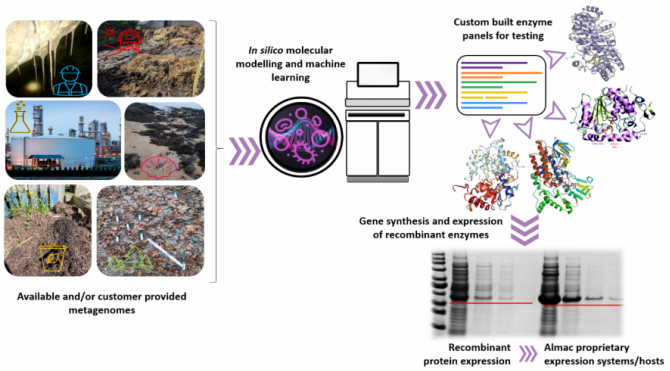

FIGURE 1

FIGURE 2

KEYWORDS

machine learning | smart enzyme discovery | in silico design | metagenomes

BIBLIOGRAPHY