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Resumo	Lipases are one of the most used enzymes in the pharmaceutical industry due to their efficiency in organic syntheses, mainly in the production of enantiopure drugs. From an industrial viewpoint, the selection of an efficient expression system and host for recombinant lipase production is highly important. The most used hosts are <i>Escherichia coli</i> and <i>Komagataella phaffii</i> (previously known as <i>Pichia pastoris</i>) and less often reported <i>Bacillus</i> and <i>Aspergillus</i> strains. The use of efficient expression systems to overproduce homologous or heterologous lipases often require the use of strong promoters and the co-expression of chaperones. Protein engineering techniques, including rational design and directed evolution, are the most reported strategies for improving lipase characteristics. Additionally, lipases can be immobilized in different supports that enable improved properties and enzyme reuse. Here, we review approaches for strain and protein engineering, immobilization and the application of lipases in the pharmaceutical industry.
Fomento	