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CELL IMMOBILIZATION TECHNIQUES AND BIOTRANSFORMATION PROCESSES

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Using cells as biological catalysts in industrial processes is necessary to obtain several different products of industrial interest. Commonly used catalysts have costs associated with the acquisition, separation, purification and reuse processes, making them more expensive. Therefore, the immobilization technique emerges as a viable method to minimize costs, especially as an alternative to the possibility of the reuse of immobilized agents. This technique has several applications in different industries, such as the food, pharmaceutical, and biomedical sectors and in the production of biofuels.The technique is based on the inclusion or fixation of the converting agents in a natural or synthetic matrix to allow the exchange of substrate and product without the release or loss of cells. For this, individualized methods can be used, such as entrapment, adhesion, encapsulation or combined methods, to meet the cell's activity and maintenance. Each method has its advantages, such as a more straightforward mass transfer process, preservation of the conversion agents and greater stability, which must be considered for the application and better use of the technique.

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