

Proteins, crucial in various industries (food, pharmaceuticals, cosmetics), require purification for effective use. This paper reviews chromatographic and non-chromatographic protein purification techniques, highlighting the importance of efficient, cost-effective methods. The purification process, whether preparative (large-scale industrial production) or analytical (research purposes), aims to isolate specific proteins from complex mixtures, removing contaminants. Developing scalable, low-cost purification methods is crucial for mass production, especially for enzymes in the bio-economy, as downstream processing costs significantly impact overall production expenses. The challenge lies in separating proteins without inactivating others, demanding innovative approaches.