49g Strategies for Extracting Recombinant Dog Gastric Lipase from Transgenic Corn Seed

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Extraction of hydrophobic proteins generally requires detergent, and this work illustrated some strategies for extracting hydrophobic proteins from transgenic plants. Recombinant dog gastric lipase (rDGL), a hydrophobic protein, was expressed in the endosperm (starch-rich) fraction of corn seeds. A selective extraction strategy was developed to eliminate 75% of contaminant proteins without compromising rDGL recovery from the meal of whole grain. Upstream processing was also researched to facilitate the extraction of rDGL. The first strategy was proposed based on a defatting procedure that extracted oil from corn seeds and thus reduced the amount of detergent in the subsequent step for extracting rDGL. The second strategy was developed by fractionating corn seeds, followed by extracting rDGL-containing fraction only. The above strategies reduced the amount of contaminant proteins in extracts or required a smaller amount of detergent for extraction, which may simplify further purification steps and lower the overall cost of producing recombinant proteins.