

## CORRECTION OF EXOCRINE PANCREATIC INSUFFICIENCY BY PLANT-DERIVED ENZYMES (LITERATURE REVIEW)

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*Exocrine pancreatic insufficiency is characterized by the pancreas' inability to secrete enzymes and/or bicarbonates into the intestinal lumen in sufficient quantities, resulting in abnormal food digestion and malabsorption of nutrients. Currently, there are many porcine-derived pancreatin preparations available that replace the patient's pancreatic enzymes deficiency. However, these preparations are not recommended for long-term use, due to a feedback mechanism that suppresses the secretion of the body's own pancreatic enzymes. Therefore, the problem of an alternative choice for temporary exocrine pancreatic insufficiency compensation arises, especially among certain patient groups, with prospects for further development and implementation of a comprehensive plant-derived enzyme preparation.*

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*The most well-known representative of plant-derived enzymes is papain, bromelain, actinidin and zingibain. A comparative analysis of actinidin with bromelain and papain revealed significant differences in protease activity against animal-derived proteins. It was found that actinidin and bromelain are particularly effective for collagen hydrolysis. It was also found that bromelain has better proteolytic properties, demonstrating a higher ability to hydrolyze myofibrillar protein and increase the content of free amino acids in meat, compared to other proteases, especially papain. The zingibain protease preparation is most effective for the hydrolysis of connective tissue proteins, and actinidin proteases – for the hydrolysis of beef myofibril proteins. In general, the use of papain, bromelain, actinidin and zingibain has a favorable effect and improves the digestion of certain food components.*

*Future research should aim to study the potential role of these plant extracts not only as enzymes, but also for adjuvant therapy or alternative treatment patients for a range of internal organ diseases.*

**Key words:** exocrine pancreatic insufficiency, plant-derived enzymes, papain, bromelain, actinidin, zingibain.