BioAgilytix Diagnostics

Disaccharidases in Bowel Tissue

Specimen Type	Human Small Bowel Tissue		
Specimen Volume	9 mg		
Collection	Sterile containers or tissue cassettes. Specimens should be frozen within 2 hours of surgery and maintained at a minimum of -80°C.		
Minimum Volume	4 mg		
Handling	Ship frozen on dry ice.		
Rejection Criteria	Ambient temperature specimens. Refrigerated temperature specimens. Specimens received unfrozen. Samples received in any type of preservative solution must be rejected. *NOTE: For specimens arriving thawed or at an incorrect temperature, the client will be notified to determine whether the specimen should be rejected, or should be run with a disclaimer.*		
Stability	Frozen at -80°C for 90 days.		
Methodology	Enzyme Assay		
Reference Range	Lactase	13.00 – 105.00	µmole/min/g protein
	Sucrase	27.00 – 190.00	µmole/min/g protein
	Maltase	84.00 – 591.00	µmole/min/g protein
	Palatinase	4.00 – 67.00	µmole/min/g protein
Turnaround Time	Up to 5 business days.		
CPT Code	82657 x 4		
Clinical Significance	The enzymes collectively known as the mucosal disaccharidases (lactase, maltase, palatinase, and sucrase) are present in normal small intestine and fetal colon. Depending on the disease state, different enzymes are affected. A decrease in the enzyme activity of these disaccharidases has been noted in colonic adenomas, adenocarcinomas and malabsorption. Decreased disaccharidase activity is a good indicator of mucosal injury, with the exception of lactase.		
Principle	Tissue homogenates are prepared and added directly to maltose, lactose, sucrose, and palatinose substrate solutions. Glucose is liberated from each reaction by the actions of maltase, lactase, sucrase, and palatinase present in the sample. The reactions are terminated by boiling, and the rate of glucose release is quantified from a glucose standard curve in an endpoint colorimetric assay using glucose oxidase reagent. The rate is dependent on the amount of protein present in the sample, which requires that a second assay be performed to determine the protein concentration. The amount of protein is quantitated using a colorimetric		

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	assay in which the concentration is derived from the sample OD off of a standard curve.