

22 Many multicellular organisms need to be able to convert monosaccharides into polysaccharides and back again.

Mammals convert the monosaccharide glucose into a highly branched polysaccharide called glycogen, which gets stored in liver cells.

(a) Explain why mammals store glycogen instead of glucose.

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(b) Humans use the enzyme α -amylase to break down polysaccharides in food for absorption into the blood.

The gene for human α -amylase is found on chromosome 1.

The gene is transcribed in the nucleus and translation occurs on the rough endoplasmic reticulum in cells of the salivary gland.

Describe how the molecule is prepared and secreted by cells of the salivary gland after translation has taken place.

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