

## Glycogen. (UQ) → Compare starch & glycogen.

- Branched polymer of linked glucose residues.

with

$\alpha$  (1-4) linkages in the straight chain.

$\alpha$  (1-6) branching point.

- more branched & more compact than amylopectin.

- Branches  $\uparrow$  H<sub>2</sub>O solubility.

- 2 types → muscle glycogen: energy during muscle contraction  
liver glycogen: during starvation.

- glycogen is stored in muscle/liver.

- Inner core of glycogen contains glycogenin, a primer protein (7 glucose residues)

→ glycogenin is the precursor of glycogen.

## Cellulose.

### Function.

- Structural
- Supporting tissues of plants.

### Cellulose:

- Homopolymer,  $\beta$  (1-4) linked glucose residues.
- cell wall of plants.

2 mark

(1) (2)

⇒ Bet -1,4 bridges are hydrolysed by the enzyme

### Cellobiase\*



- enzyme is absent in humans,  $\therefore$  cellulose can't be digested.

### Chitin.

- Homopolymer  $\beta$  (1-4) linked N-acetylglucosamine residues
- Hard exoskeleton of arthropods (shells) e.g. Insect, lobster, crabs.

## Inulin.

- polymer of D-fructose with  $\beta(1-2)$  linkage.
- Reserve carbs in various bulbs & tubers
- clinically <sup>\*</sup> Used to assess renal functions & GFR "Inulin Clearance".

## Dextrins.

- Made up of glucose units with (1,6) (1,4) (1,3) linkage.
- Because of high mole. wt, they will not easily go out of vascular component. So it is used in <sup>clinical</sup> <sup>impt.</sup> intravenous infusion in treatment of hypovolemic shock. (loss of fluid & blood)

## Heteropolysaccharides:

- Agar and Agarose.
- mucopolysaccharides (glycosamino glycans (GAGs)):  
made of aminosugars & uronic acid.

- Agar: made of glucose, galactose, other sugars

### uses.

- ① culture of microorganisms.
- ② supporting medium for immunodiffusion.

Agarose : contain galactose & 3, 6 anhydrogalactose units.

use

matrix for electrophoresis.