

BCMB 8020
April 13,2006

Glycogen

Most common storage form of glucose in animals, bacteria (yeast)

Branched polymer of α 1,4- & α 1,6-linked glucose

Similar to amylopectin; but with smaller and more frequent branching: branching every 8-12 residues

In animals glycogen is stored largely in the liver and muscle

In mammals glycogen can make up ~10% liver mass & 2% of muscle mass

Glycogen use in animals

Insulin

glucagon or **adrenaline**
(fasting) (flight or fight)

Excess Glucose →→ GLYCOGEN →→replenished glucose
(i.e. after feeding)

glycogen synthesis

glycogenolysis

In vertebrates ~ 2/3 of dietary glucose is converted to glycogen

transported in blood

Food → Glucose → intestine → cells → converted to Glc-6-P
absorbed *hexokinase*

liver (GLUT1)

muscle (*GLUT4, GLUT 1)

*=insulin stimulated