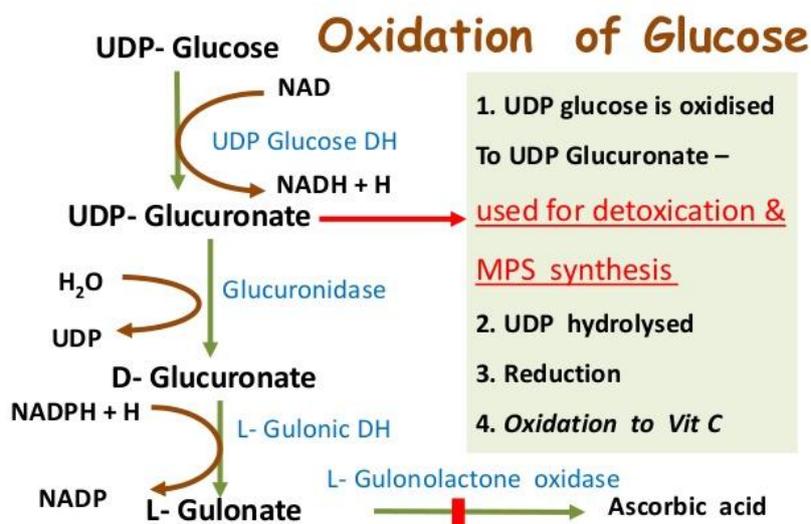
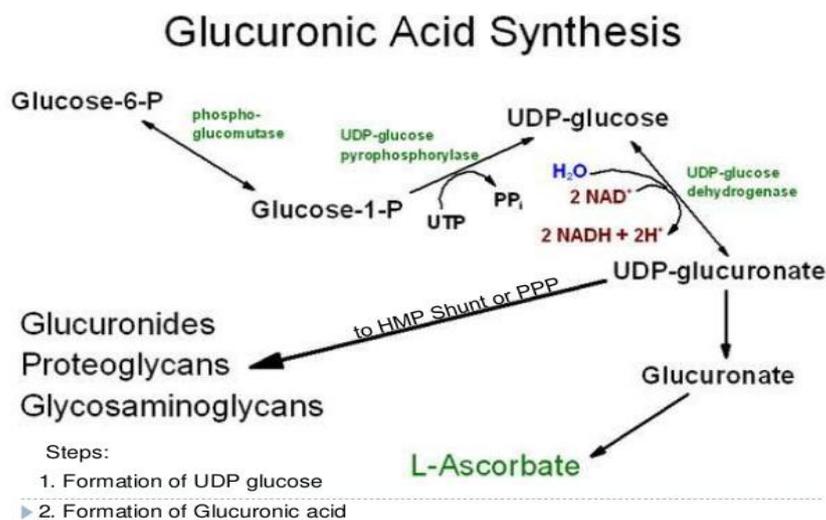


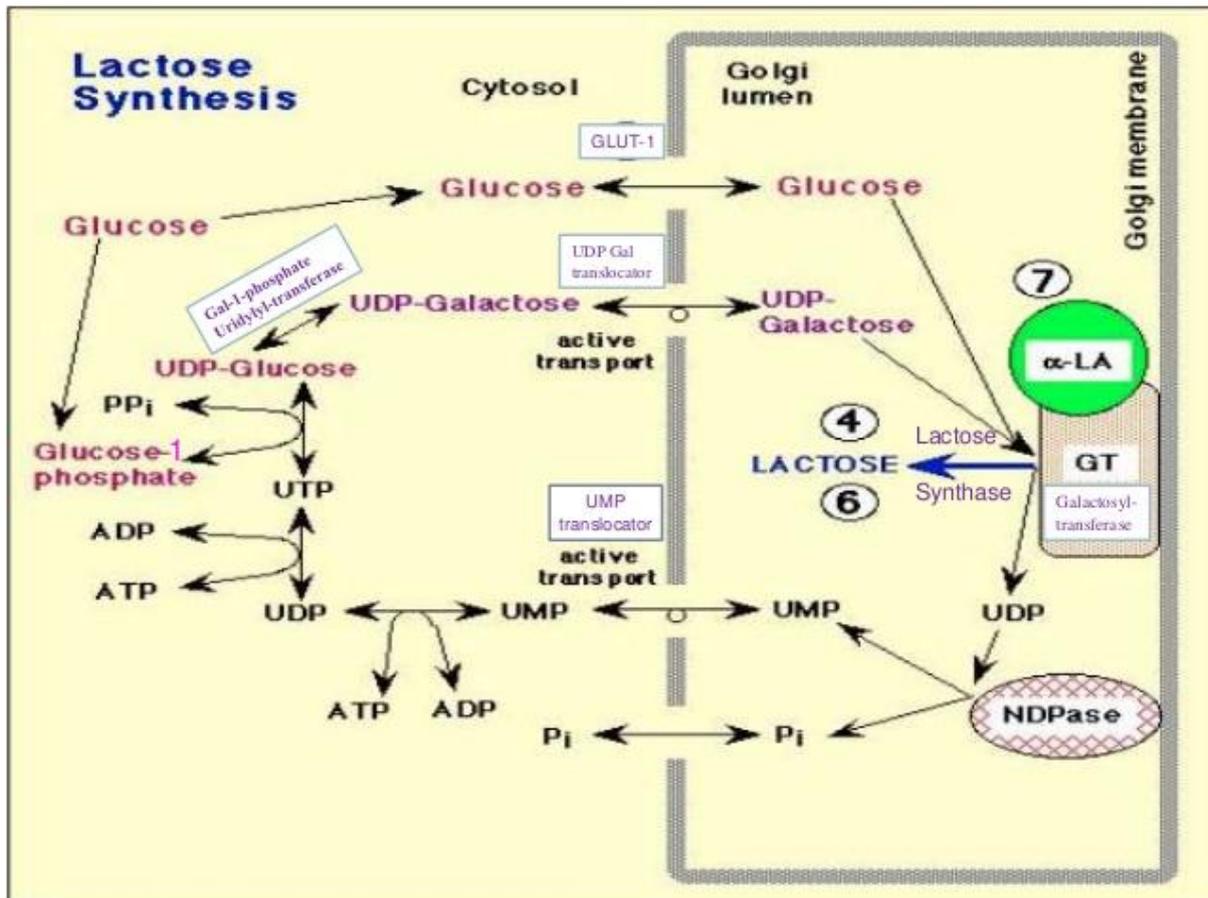
Glucuronate Pathway

- Also called uronic acid pathway
- An alternative pathway for the oxidation of glucose that does not provide a means of producing ATP, but is utilized for the generation of the activated form of glucuronate, UDP-glucuronate which is mainly used for detoxification of foreign chemicals and for the synthesis of Mucopolysaccharides.
- This pathway also produces Ascorbic Acid in certain animals.
- The unutilized Glucuronate produced in this pathway is converted to Xylulose 5-phosphate which is further metabolized through PPP.



Lactose Synthesis

- Also called milk sugar.
- Lactose, the disaccharide of milk, consists of galactose joined to glucose by a β -1,4-glycosidic linkage.
- Lactose is hydrolyzed to these monosaccharides by lactase in human beings and by β -galactosidase in bacteria.



Steps:

- Glucose is first converted to UDP-galactose via the enzyme galactose-1-phosphate uridylyltransferase.
- UDP-galactose is then transported into the Golgi by the UDP galactose translocator, an antiporter which uses facilitated transport to move UDP galactose into the Golgi and exports UMP.
- Once inside the Golgi, the UDP galactose and glucose (which moves into the golgi via the GLUT-1 transporter) become substrates for the lactose synthase enzyme

complex, comprised of the enzymatic subunit, galactosyltransferase with its regulatory subunit, Alpha- lactalbumin.

- Lactose synthase creates lactose through bonding galactose from UDP to glucose through a glycosidic bond.
- Although GT is found in many tissues in the body, Alpha- lactalbumin is only found on the inner surface of the Golgi in the mammary glands, limiting lactose production to the mammaries.