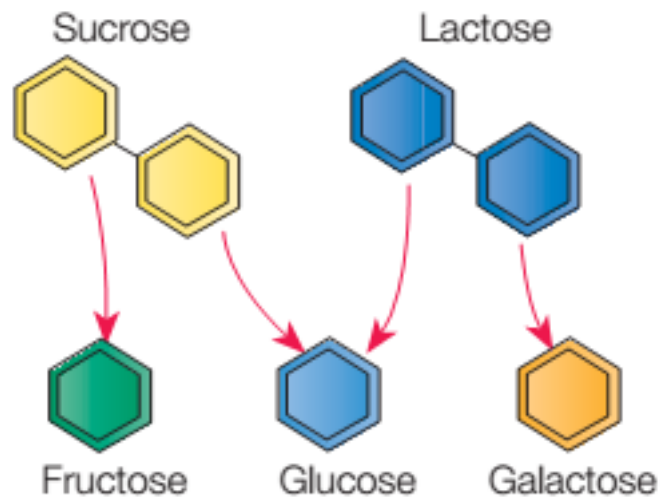


LACTOSE

Lactose is called as milk sugar. It is 30 times less sweet than glucose. It is the only sugar & carbohydrate found in the milk. It is disaccharide compound of two monosaccharide compounds (glucose + galactose). The lactose contents in milk vary between 3.5-5.5% except human.

It is a white colored substance present in form of powder or in small granule form. As it is water soluble so it occurs as molecular solution.



Sweetness of milk is because of sucrose. But it is 30 times less than glucose. If milk is heated to high temperature & kept at that temperature, then the lactose turns into brown color & acquires a specific taste & flavor called as caramel. This process is known as Caramelization.

One other reaction occurs on heating milk to high temperature. This is a chemical reaction between lactose & protein called maillard reaction. This reaction results in brown color and specific flavor & taste. Melanoidins are end product of maillard reaction. Maillard reaction takes place at high temperature (not starts at low temperature) then reaction will continue even if temperature is decreased but Caramelization will stop at low temperature.

When lactose is attacked by lactic acid bacteria, then these bacteria produce an enzyme called as Lactase, which attacks the lactose & splits it into glucose & galactose. Then other enzymes from lactic acid bacteria attack on these glucose & galactose & convert them into lactic acid through a complicated reaction. This is how acidity is produced in milk, milk goes sour & lactose is converted into lactic acid.

