



Carbohydrates

Monosaccharide Oligosaccharide Polysaccharide

| Functional group | Number of carbon atoms | Di-saccharide | Tri-saccharide | Tetra-saccharide | Homopoly-saccharide | Heteropoly-saccharide |
|-------------------------|------------------------|---------------|----------------|------------------|---------------------|-----------------------|
| Aldoses e.g Glucose | Trioses | Maltose | Raffinose | Stachyose | Starch | Hyaluronic acid |
| | Tetroses | Lactose | | | Dextrin | Heparin |
| Ketoses e.g Fructose | Pentoses | Sucrose | | | Glycogen | Chondroitin sulfate |
| | Hexoses | | | | Cellulose | Dermatan Sulfate |
| | Heptoses | | | | Inulin | Keratan Sulfate |

| | |
|------------------------------------|------------------------------------|
| MUREIN | NAG= NAM(beta 1-4 LINKAGE) |
| DEXTRIN | D-glucose(alfa1-6) |
| CELLULOSE | D-glucose(beta1-4) |
| STARCH(amylos, amylopectin) | D-glucose(alfa1-4,1-6) |
| INULIN | D-fructose(beta2-1) |

| Transporter | Present in | Properties |
|-------------|--|---|
| GluT1 | RBC, brain, kidney, colon, retina, placenta | Glucose uptake in most of cells |
| GluT2 | Serosal surface of intestinal cells, liver, beta cells of pancreas | Low affinity; glucose uptake in liver; glucose sensor in beta cells |
| GluT3 | Neurons, brain | High affinity; glucose into brain cells |
| GluT4 | Skeletal, heart muscle, adipose tissue | Insulin-mediated glucose uptake |
| GluT5 | Small intestine, testis, sperms, kidney | Fructose transporter; poor ability to transport glucose |
| GluT7 | Liver endoplasmic reticulum | Glucose from ER to cytoplasm |
| SGLuT | Intestine, kidney | Cotransport; from lumen into cell |

