

① Maltose	② Lactose	③ Sucrose	④ cellobiose
<p>① malt sugar</p> <p>② α-glucose + α-glucose</p> <p>③ Pyranose + Pyranose</p> <p>④ first sugar OH بقية C1 Second sugar H بقية C4</p> <p>⑤ O-glycosidic bond ← anomeric carbon + alcohol</p> <p>⑥ Reducing sugar because the anomeric carbon of the second is free (reducing end).</p> <p>⑦ released during the degradation of starch.</p> <p>⑧ maltose ⇒ ^{صوت الشير} Barely grains is used for preparation of malt beverage.</p> <p>⑨ α (1-4) glycosidic bond.</p> <p style="text-align: center;">glycosidic bond</p> <p>O-glycosidic bond: anomeric + alcohol N-glycosidic bond: anomeric + amine</p>	<p>① milk sugar</p> <p>② α-glucose + β-galactose</p> <p>③ Pyranose + Pyranose</p> <p>④ C1 (galactose) C4 (glucose)</p> <p>⑤ α (1-4) β glycosidic bond β (1-4) glycosidic bond.</p> <p>⑥ α glucose ← α/β anomeric carbon ← OH OH down α OH up β</p> <p>⑦ Reducing sugar (Reducing end).</p> <p>⑧ occurs naturally in the milk (dairy products) ^{منتجات الألبان}</p> <hr/> <p>deficiency lactose enzyme ^{نقص إنزيم اللاكتوز} ↓ Gastro intestinal tract (GIT) disturbances ^{اضطرابات الجهاز الهضمي} * anusea / bloating / diarrhea ... due to ⇒ digestion lactose by (bacteria in colon) ^{تخمير} lactose intolerance (congenital)</p>	<p>① table sugar</p> <p>② α-glucose + β-fructose</p> <p>③ Pyranose Furanose</p> <p>④ C1 glucose C2 fructose</p> <p>⑤ α (1-2) β glycosidic bond.</p> <p>⑥ Not reducing sugar because the anomeric carbon of the second is not free but involved in the glycosidic bond.</p> <p>⑦ cane/beet ^{ساقين / قصب}</p>	<p>① β glucose + β glucose</p> <p>② Pyranose + Pyranose</p> <p>③ C1 glucose C4 glucose</p> <p>④ β (1-4) glycosidic bond.</p> <p>⑤ released during cellulose degradation</p> <p>β cellobiose isomer of maltose ⇒ α</p> <p style="text-align: right;">↔ مراجعة</p>

Disaccharides.

* Two monosaccharides linked together by (glycosidic bond)

① Maltose (malt sugar).

* consist. 2 α -glucose

* Pyranoses.

* First saccharide $C_1 \rightarrow$ (OH) تعلق, Second saccharide $C_4 \rightarrow$ (H) تعلق
 α -D glucopyranosyl (1-4) α -D glucopyranose

(O-glycosidic bond) C_1 و C_4 (O) تعلق *
α (1-4) (one to four)

H₂O و تعلق \rightarrow تعلق

* Reducing sugar \Rightarrow because contains free carbonyl carbon.
free anomeric carbon.

oxidation تعلق, or reduction تعلق \Leftarrow Reducing end

Barely grains is used for preparation \Leftarrow (maltose) *
of malt beverage during degradation of starch.

Maltose and glucose \Leftarrow glucose is \Leftarrow glucose is

Note:- Reducing sugar. \Leftarrow (monosaccharide) is

Glycosidic bond (Type of covalent bond)

O-glycosidic bond

between anomeric carbon of sugar
+ alcohol.

N-glycosidic bond

between anomeric carbon
of sugar + amine

تعلق

مثال لسكر

D-ribose (RNA) and Deoxyribose (DNA)

② Lactose (milk sugar). \Rightarrow Reducing sugar.

+ consist glucose + galactose

C4 (Pyranose) (Pyranose) C1
 β / α β

$\beta(1-4)$ α glycosidic
 $\beta(1-4)$ glycosidic.

anomeric carbon (OH) β / α (glucose) *
(β OH up) (α OH down)

occurs naturally in the milk (dairy products). *

Lactose Intolerance :- deficiency of lactose enzyme

\Downarrow (leading)

Gastrointestinal tract (GIT) disturbances

\Downarrow (Such as)

- ① nausea غثاء
- ② bloating نفخ
- ③ abdominal cramps آلام
- ④ diarrhea اسهال

* due to digestion of lactose (intact) by bacteria found in

Colon

القناة الهضمية

في القولون

