

**Explore enzymes and the science of lactose intolerance  
using lactase tablets**

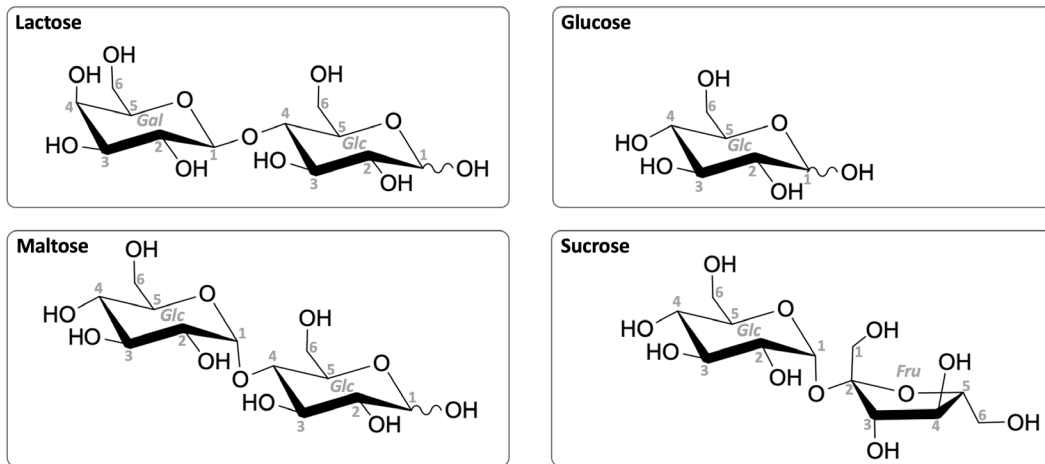
# Worksheet 1

## Detecting different sugars using Fearn's reagent

1. Perform the experiment 'Detecting different sugars using Fearn's reagent'.
2. Record your observations by completing Table 1, column 2.
3. Study the molecular structures of the sugars depicted in the figure and complete the remaining columns of Table 1.
4. Summarize your results by answering the following questions:
  - a) Which colour is observed using Fearn's reagent on monosaccharides like glucose? (Tip: identical results are observed with monosaccharides galactose and fructose.)
  - b) Which colour is observed using Fearn's reagent on disaccharides with different glycosidic bonds?
  - c) What kinds of saccharides are present in whole milk and oat milk?

Table 1: Results

<b>Sugar/milk</b>	<b>Colour detected by using Fearn's reagent</b>	<b>Monosaccharide or disaccharide (if applicable)</b>	<b>Type of glycosidic bond (if present)</b>
Lactose			
Maltose			
Glucose			
Sucrose			
Whole milk			
Oat milk			



Molecular structures of sugars, shown here as chair conformation. Respective monosaccharide units (galactose, Gal; glucose, Glc; fructose, Fru) and carbon-atom numbers are indicated in grey; wavy bonds indicate reductive or ring-opening capabilities.

*Image courtesy of the author*