

SUGAR TASTE TESTS

David B. Fankhauser, PhD
revised 12 Sept 2016

Wash your hands at or just before the beginning of this class.

All sugars are carbohydrates (CH_2O) many with identical chemical composition ($\text{C}_6\text{H}_{12}\text{O}_6$, for instance), but varying in the stereo arrangement of the component atoms at asymmetric carbons (etc) This is critical to the property of the sugar itself. The monosaccharides glucose, galactose, and fructose have the identical formulae, $\text{C}_6\text{H}_{12}\text{O}_6$, and disaccharides sucrose and lactose each have the exact same formula, $\text{C}_{12}\text{H}_{22}\text{O}_{11}$. Yet these sugars have distinctly and easily demonstrated different properties. Some of these properties become apparent in the following sugar taste test.

Two teaspoons of each of the five sugars have been placed in labeled petri dishes. These are passed around class for tasting *in the order listed*. You are to ***slightly dampen*** your finger, lightly touch the sugar, and taste it. Fill in the following table describing your conclusions as to sweetness and sensation. Results to be evaluated after students have tested the sugars.

TASTE IN THE FOLLOWING SEQUENCE:

sugar:	how sweet is it?	describe its sensation in the mouth:
1) LACTOSE disaccharide: galactose + glucose (milk sugar)		
2) GALACTOSE monosaccharide: a component of lactose		
3) SUCROSE disaccharide: glucose + fructose (cane sugar)		
4) GLUCOSE monosaccharide: (alias dextrose) (corn sugar)		
5) FRUCTOSE monosaccharide: (alias levulose) (fruit sugar)		

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