


Fotometric Test for Glucose and Ethanol

<p>At 340 nm, 20 – 37 °C (during measuring), Calibrated against air (without cuvette) or water</p> <p>$\Delta E = (E_2 - df \cdot E_1)_{\text{sample}} - (E_2 - df \cdot E_1)_{\text{REV}}$ REV = Reagent empty value df = dilution factor</p>	
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Ethanol Estimation Protocol

	Reagent Empty Value (REV)	Sample / Control
Reagent 1	500 μL	500 μL
Sample / Control	-	25 μL
H ₂ O _{dest.}	25 μL	-
Mix by pipetting up and down, incubate 3 min. at 20 – 37 °C, measure E ₁		
Then add:		
Reagent 2	125 μL	125 μL
Mix by pipetting up and down, incubate 15 min at 20 – 37 °C, measure E ₂		

$$C_{\text{Ethanol}} (\text{g / L}) = \frac{(V \cdot \text{MG} \cdot \Delta E)}{(\varepsilon \cdot d \cdot v)} = 0,190 \cdot \Delta E$$

V: Total volume (0,65 mL)
 MG: Molekular mass (46,07 g/mol)
 d: 1 cm
 v: Sample volume (0,025 mL)
 ε : Extinction coefficient
 (NADH+H⁺ = 6300 L/mol • cm at 340 nm)

Glucose Estimation Protocol

	Reagent Empty Value (REV)	Sample / Control
Reagent 1	500 μL	500 μL
Sample / Control	-	25 μL
H ₂ O _{dest.}	25 μL	-
Mix by pipetting up and down, incubate 3 min. at 20 – 37 °C, measure E ₁		
Then add:		
Reagent 2	125 μL	125 μL
Mix by pipetting up and down, incubate 15 min at 20 – 37 °C, measure E ₂		

$$C_{\text{Glucose}} (\text{g/L}) = \frac{(V \cdot \text{MG} \cdot \Delta E)}{(\varepsilon \cdot d \cdot v)} = 0,744 \cdot \Delta E$$

d: 1 cm
 V: Total volume (0,65 mL)
 MG: Molekular mass (180,15 g/mol)
 v: Sample volume (0,025 mL)
 ε : Extinction coefficient
 (NADH+H⁺ = 6300 L/mol • cm at 340 nm)