

Multiparametric sequential injection system for the determination of nutrients in soil leachates

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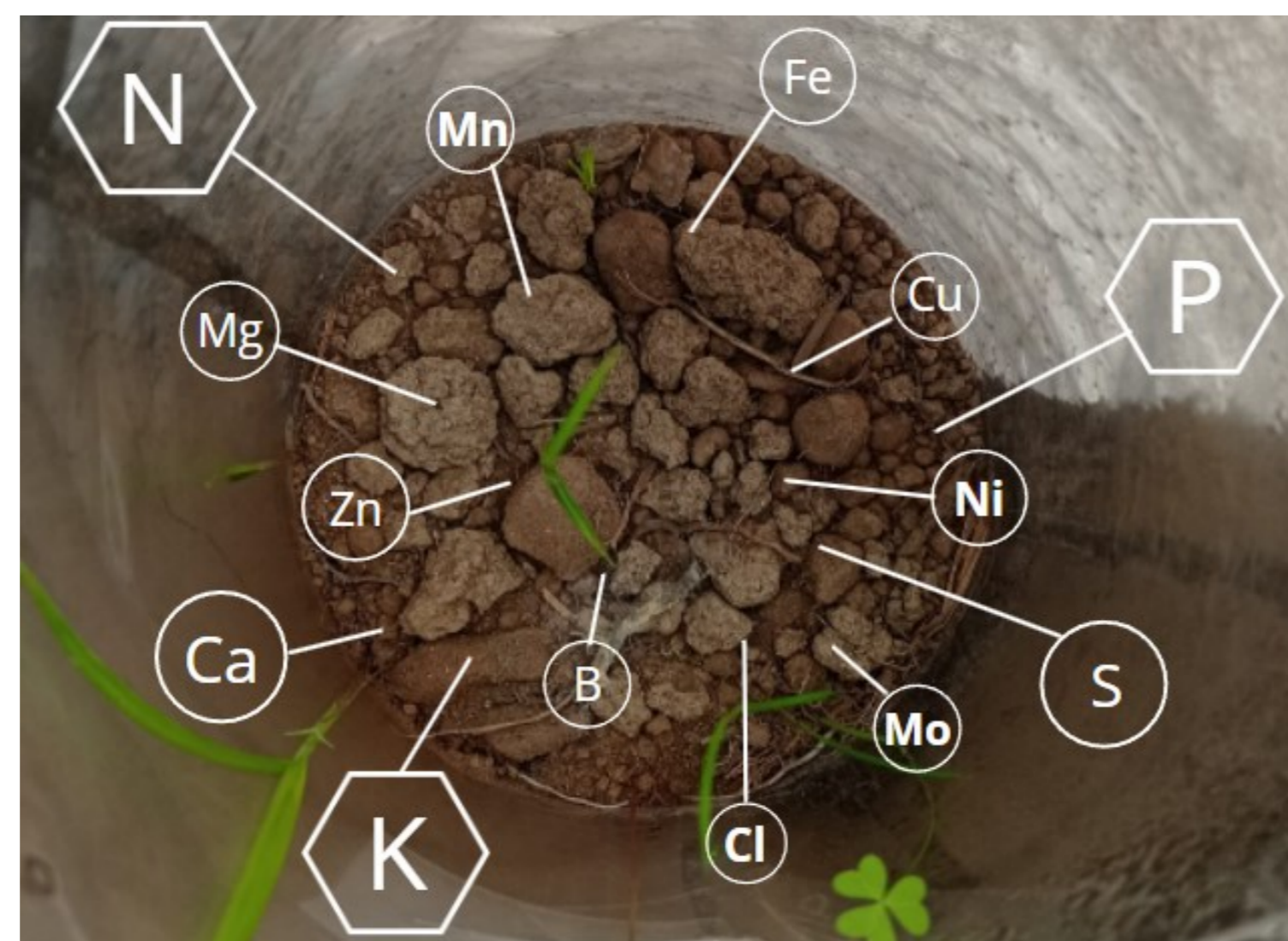
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Background

HSoil4Food – Healthy soils for healthy foods (NORTE-01-0145-FEDER-000066)

Macro and micro nutrients are very important for plants growing in the soil

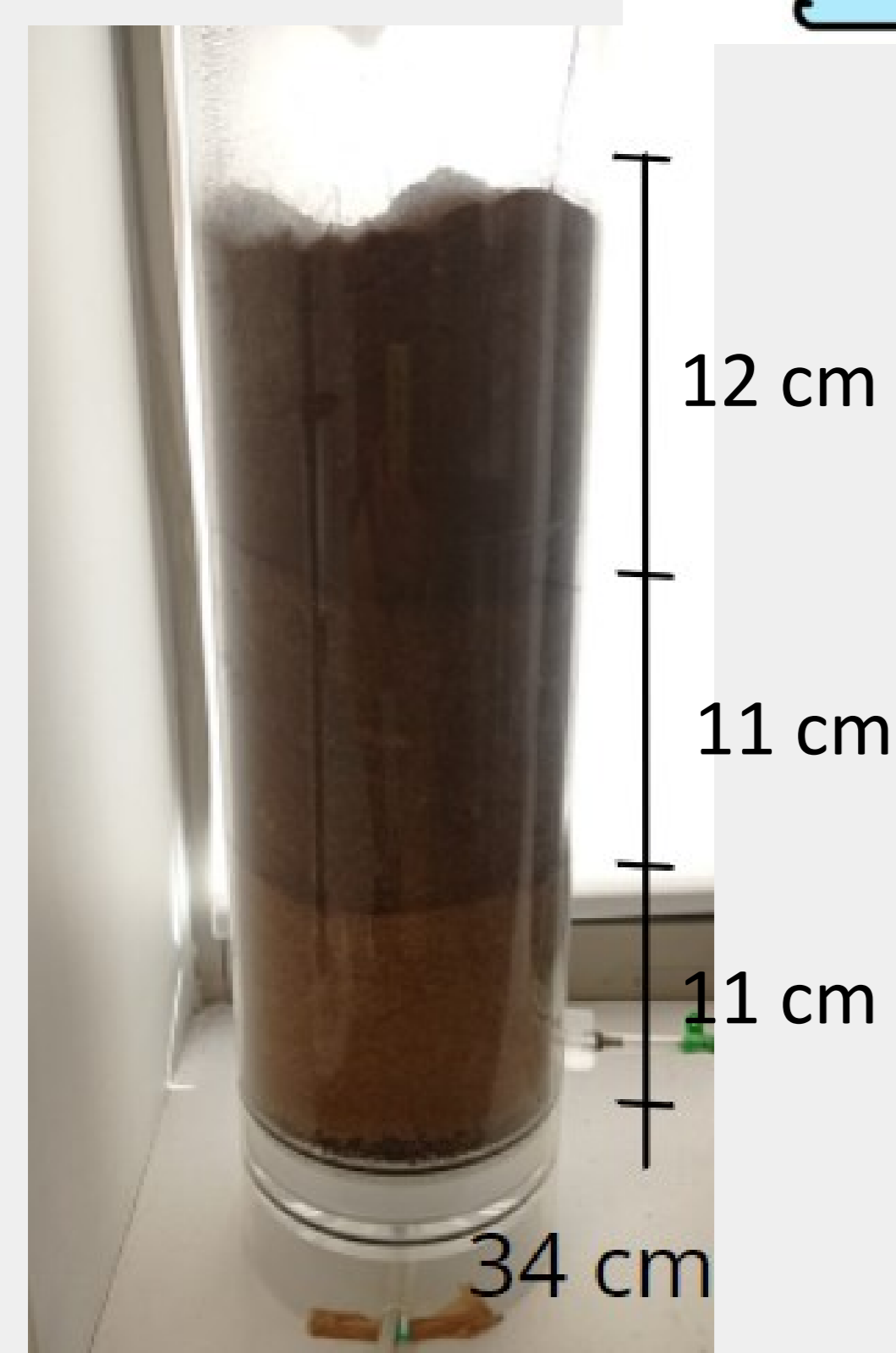
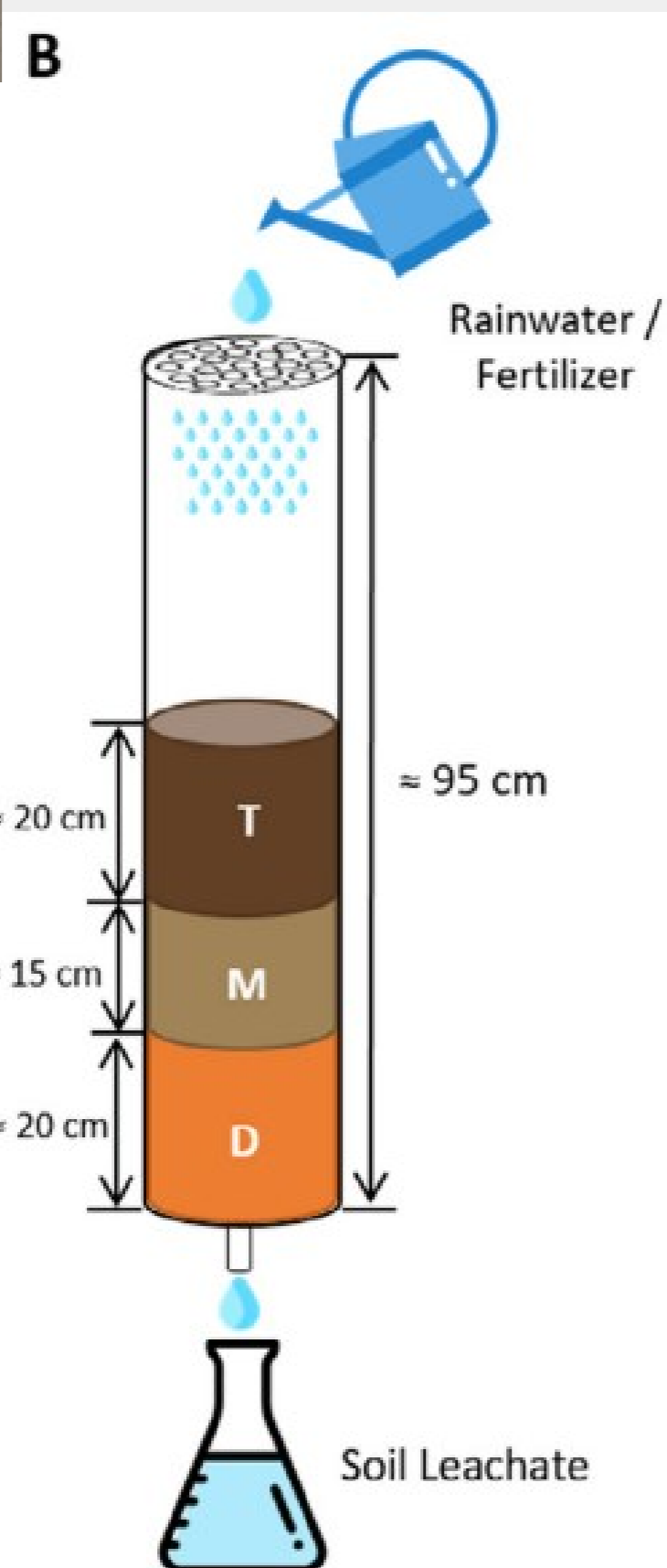
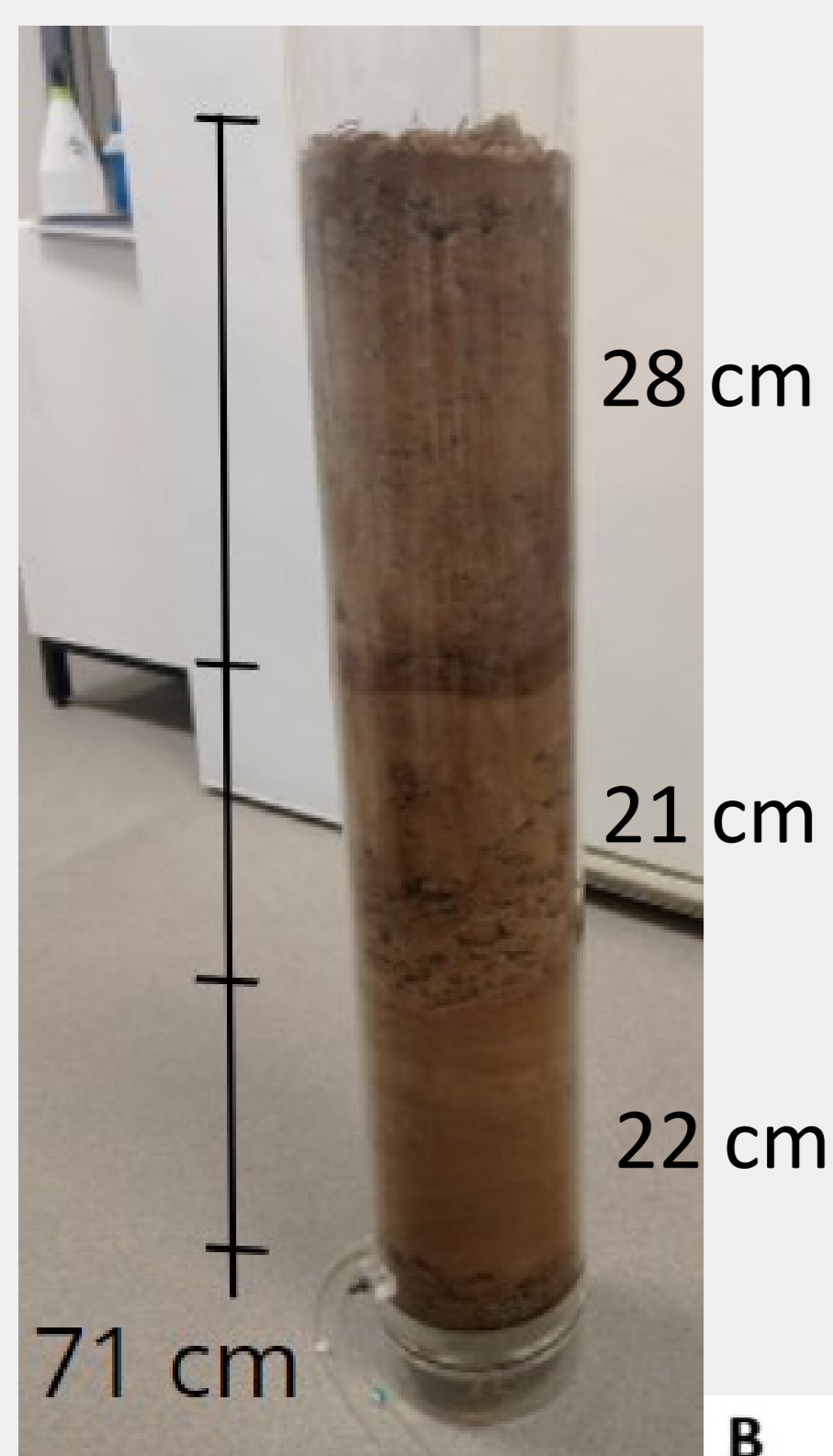


Objectives

Development of a single flow analysis system to monitor macro and micro nutrients



- Essential Nutrients
 - Nitrate
 - Nitrite
 - Phosphate
 - Calcium
- Metal ions
 - Magnesium
 - Iron
 - Manganese



Methods

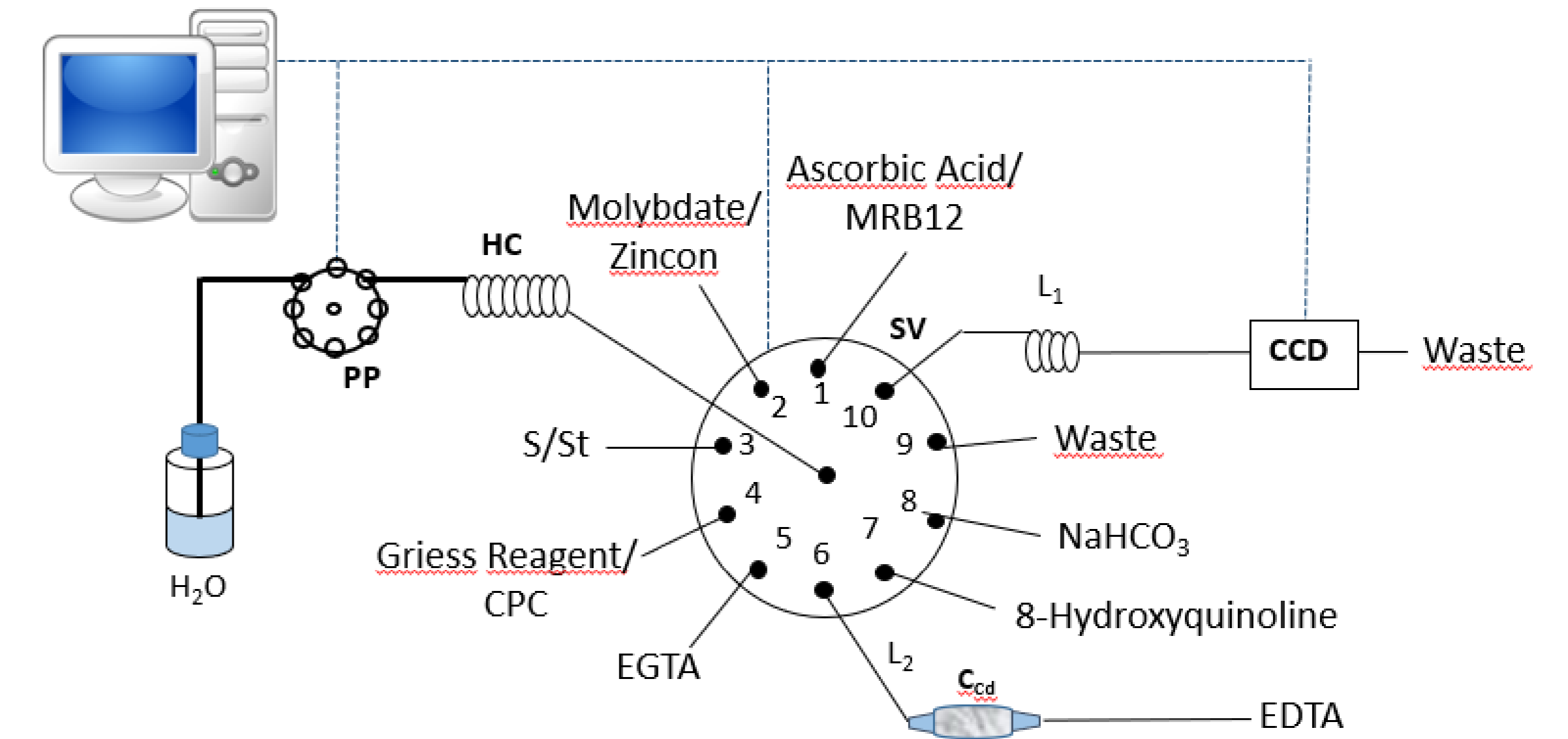
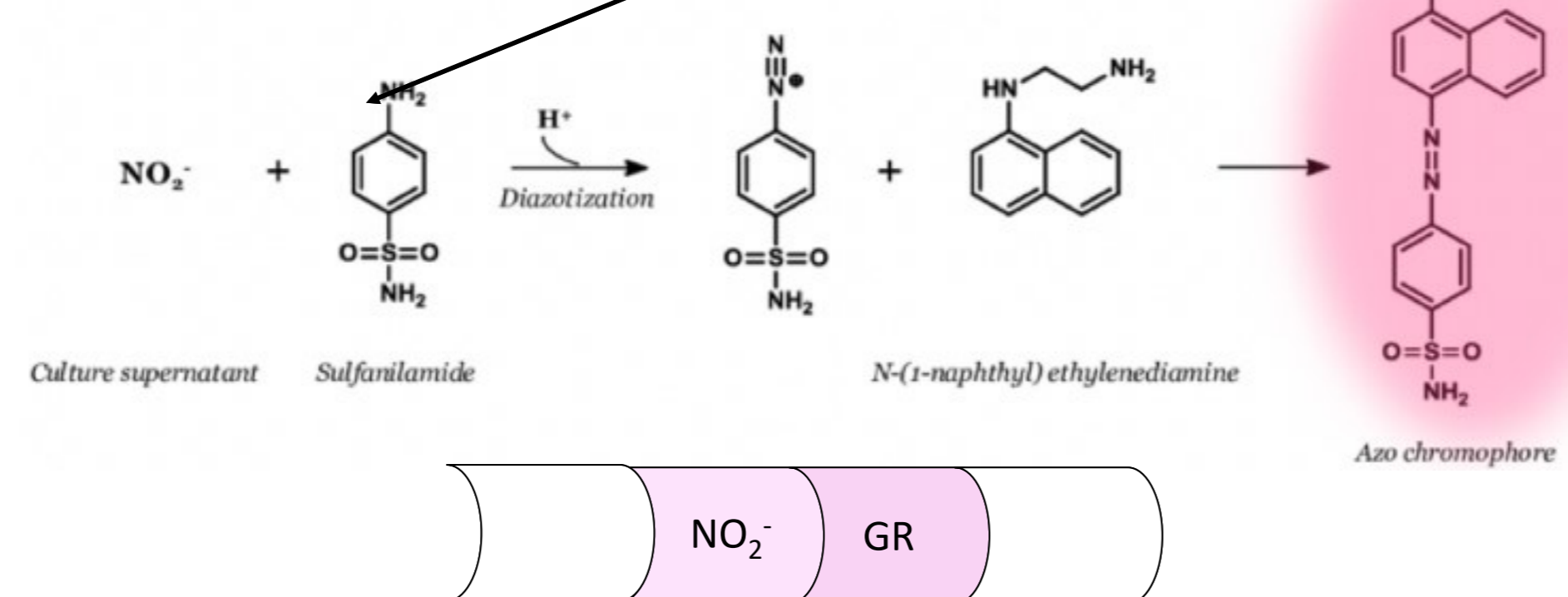
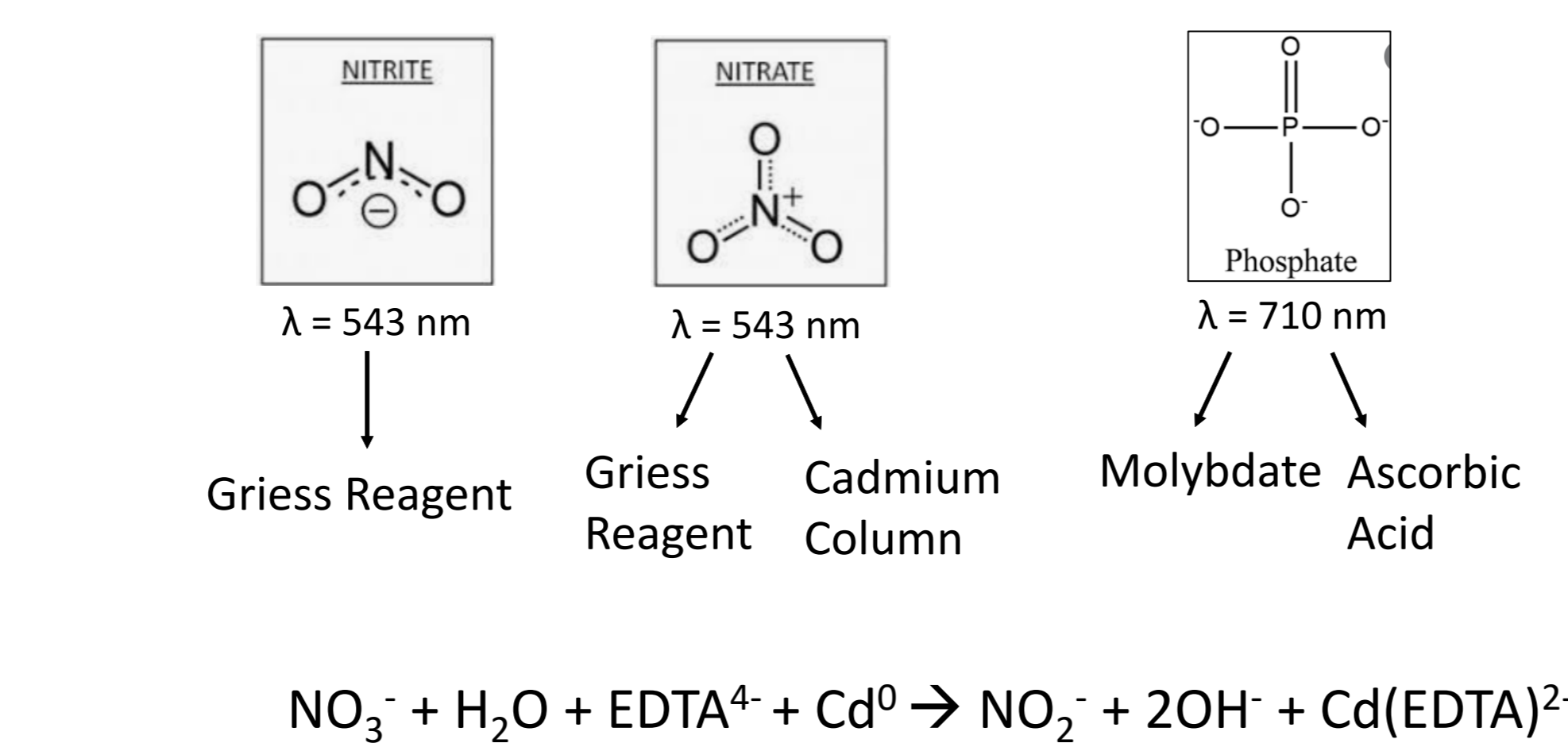
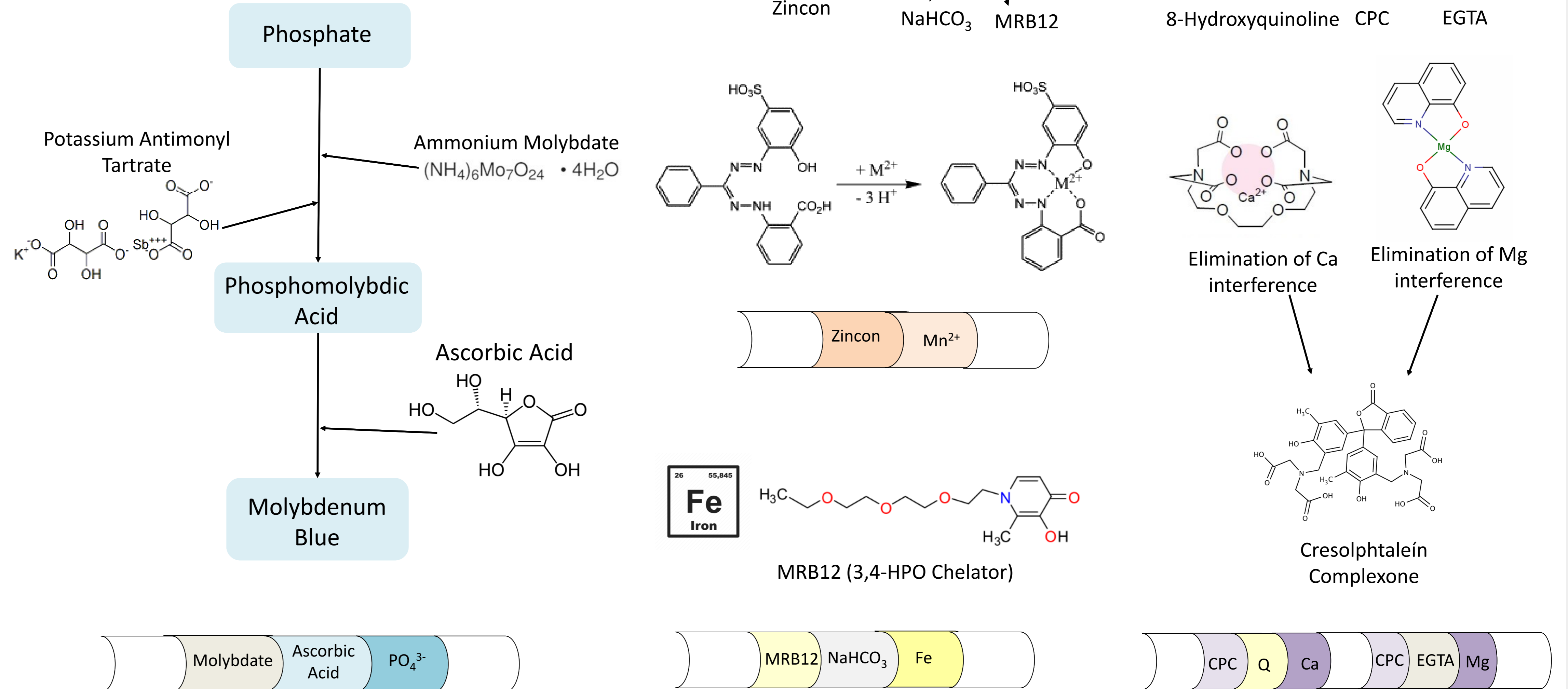


Fig.1 - Sequential injection manifold for the determination of phosphate, nitrate, nitrite, iron, manganese, calcium and magnesium; SV, selection valve; PP, peristaltic pump; HC, holding coil, 300 cm; AA, Ascorbic Acid 30 g/L; Molybdate reagent 16 g/L; S/St, sample/phosphate, nitrate, nitrite, iron, manganese, calcium and magnesium standard; Bf, NaHCO3 0.5M; Griess Reagent (Sulfanilamide 20 g/L and N1NED 2 g/L); CPC, Cresolphtalein complexone 0.15 g/L; 8-hydroxyquinoline 15 g/L; EDTA 0.4 g/L with 20 g/L ammonium chloride; EGTA, 2.4 g/L; Zincon 100 µM; MRB12, chelator, 3,5 g/L; L1, reaction coil 140 cm; CCD, detector (λ= 460, 490, 543, 572, 710 nm); L2, connection 3 cm length; L3, Cd, Cadmium column; W, waste.



Acknowledgements

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