

Materials List for:

Methods for the Determination of Rates of Glucose and Fatty Acid Oxidation in the Isolated Working Rat Heart

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Materials

Name	Company	Catalog Number	Comments
Sodium Chloride (NaCl)	Fisher Scientific	BP358	
Potassium Chloride (KCl)	Fisher Scientific	BP366	
Potassium Phosphate Monobasic (KH ₂ PO ₄)	Fisher Scientific	P284	
Magnesium Sulfate Heptahydrate (MgSO ₄ *7H ₂ O)	Fisher Scientific	M63	
Sodium Bicarbonate (NaHCO ₃)	Fisher Scientific	S233	
Calcium Chloride (CaCl ₂)	Sigma-Aldrich	C5670	
AG 1-X8 resin, chloride form, 100 - 200 dry mesh size, 500 g	Bio-Rad	1401441	This item can be replaced by purchasing directly the hydroxide form (see reference below), but this will cost almost 8 times more
AG 1-X8 resin, hydroxide form, 100 - 200 dry mesh size, 100 g	Bio-Rad	1432445	Purchasing this item allows to bypass the conversion of the anion exchange resin from the chloride form to the hydroxide form (See section 1.2 of protocol)
Glass Microanalysis Vacuum Filter Holder	Fisher Scientific	09-753-2	
Sodium Hydroxide (NaOH)	Fisher Scientific	S318	Corrosive. Consult the product MSDS for appropriate handling and storage.
Gas Dispersion Tube with Fritted Cylinder	Fisher Scientific	11-138B	
Probumin Bovine Serum Albumin Fatty Acid Free, Powder	EMD Millipore	820027	We recommend the use of a charcoal-defatted BSA, as other purification process such as cold ethanol fractionation may leave residues toxic for the heart.
Sodium Oleate	Sigma-Aldrich	O7501	
Oleic Acid, [9,10- ³ H(N)]-	PerkinElmer	NET289005MC	Radioactive material. Follow your Institution's radiation safety office guidelines for ordering and handling.
Dialysis Membrane Tubing, 29 mm diameter	Fisher Scientific	08-667E	
D-(+)-Glucose	Sigma-Aldrich	G7021	
Glucose, D-[¹⁴ C(U)]-	PerkinElmer	NEC042B005MC	Radioactive material. Follow your Institution's radiation safety office guidelines for ordering and handling.
Humulin R U-100	Eli Lilly and Company	NDC 0002-8215-01 (HI-210)	

Inactin Hydrate	Sigma-Aldrich	T133	Controlled substance on USDEA Schedule III
3-0 Silk Black Braid	Roboz Surgical	SUT-15-3	
10x Hyamine Hydroxide	PerkinElmer	6003005	Highly toxic and causes severe burns. Consult the product MSDS for appropriate handling and storage
20 ml Glass Scintillation Vials	Fisher Scientific	03-341-25E	Use glass vials for quantitative recovery of $^{14}\text{CO}_2$
20 ml HDPE Scintillation Vials	Fisher Scientific	03-337-23B	Use HDPE vials for quantitative recovery of $^3\text{H}_2\text{O}$
Red Rubber Sleeve Stoppers	Fisher Scientific	14-126DD	Fit 20 mL scintillation vials; Reusable
BD PrecisionGlide Needle 23G x 40 mm	BD	305194	Use to inject perchloric acid through the rubber sleeve stopper of the CO_2 trap
Perchloric Acid, 60%	Fisher Scientific	A228	Highly corrosive and may act as an oxidizer and/or cause an explosion hazard. Consult the product MSDS for appropriate handling and storage
Ultima Gold, Scintillation Cocktail	PerkinElmer	6013327	
Glass Wool	Fisher Scientific	AC38606	
Decon Dri-Clean Detergent Powder	Fisher Scientific	04-355	For cleaning of glassware, plastic parts, and tubing
Alconox Tergazyme Enzyme-Active Powered Detergent	Fisher Scientific	16-000-115	For cleaning of "hard to reach" surfaces (tubing, glassware) contaminated by fatty acid-BSA residue