

Protocol for analytical ultracentrifugation sample preparation:

1. Provide partial specific volume (v -bar) of the proteins. If v -bar is not available, send complete amino acid sequence of your protein via e-mail. Please type the sequence into the body of the e-mail rather than sending it as an attached file.
2. Provide minimum 250 μ L of each sample to be analyzed for equilibrium runs and 1 mL for velocity runs and at least 5 mL of buffer.
3. For accurate determination of molecular weight or oligomeric state, provide three different concentrations for each sample. An example of an ideal concentration series is 0.25 mg/mL, 0.50 mg/mL, and 1.00 mg/mL. Ensure that the absorbance at either 230 nm or 280 nm (or, whatever other wavelength) is not less than 0.25 at the lowest concentration, and does not exceed 1.00 at the highest concentration. Concentrations as low as 1 μ g/mL are acceptable only if the absorbance at 230 nm is at least 0.30. Please make your own dilutions.
4. Try to avoid using DTT, 2-mercaptoethanol, and protease inhibitors. If DTT is absolutely required to maintain sample stability, do not exceed 5 mM concentration. For ATP or ADP try to use less than 0.3 mM.
5. The reference buffer should contain all components that are in the sample minus the protein.
6. Provide us with the samples, buffers, and filled form.
7. Samples will be stored at 4°C and run at 4°C, unless otherwise specified.

Acceptable buffer components:

1-Propanol
2-Propanol
Acetic Acid
Acetone
Ammonium chloride
Ammonium hydroxide
Ammonium sulfate
Barium chloride
Cadmium chloride
Cadmium sulfate
Calcium chloride
Cesium chloride
Citric acid
Cobaltous chloride
Creatinine
Cupric sulfate
EDTA disodium
Ethanol
Ethylene glycol
Ferric chloride
Formic acid
Fructose
Glucose
Glycerol
Guanidine hydrochloride
HEPES
Hydrochloric acid
Inulin
Lactic acid
Lactose

Lanthanum nitrate
Lead nitrate
Lithium chloride
Magnesium chloride
Magnesium sulfate
Maltose
Manganous sulfate
Mannitol
Methanol
Nickel sulfate
Nitric acid
Oxalic acid
Phosphoric acid
Potassium biphthalate
Potassium bicarbonate
Potassium bromide
Potassium carbonate
Potassium chloride
Potassium chromate
Potassium dichromate
Potassium ferricyanide
Potassium ferrocyanide
Potassium hydroxide
Potassium iodide
Potassium nitrate
Potassium oxalate
Potassium permanganate
Potassium PO₄ di-basic
Potassium PO₄ mono-basic
Potassium sulfate
Potassium thiocyanate
Procaine hydrochloride
Propylene glycol
Silver nitrate
Sodium acetate
Sodium bicarbonate
Sodium bromide
Sodium carbonate
Sodium chloride
Sodium citrate
Sodium diatrizoate
Sodium dichromate
Sodium ferrocyanide
Sodium hydroxide
Sodium molybdate
Sodium nitrate
Sodium PO₄ di-basic
Sodium PO₄ mono-basic
Sodium PO₄ tri-basic
Sodium sulfate
Sodium tartrate
Sodium thiocyanate
Sodium thiosulfate
Sodium tungstate
Strontium chloride
Sucrose
Sulfuric acid
Tartaric acid
Tetracaine hydrochloride
Trichloroacetic acid
Trifluoroethanol
Tris (hydroxymethyl)aminomethane
Urea
Zinc sulfate