Leica EM AFS2 and FSP

Automatic freeze substitution (AFS) connects cryo-fixation (e. g. high pressure freezing) and resin embedding. It is a process of dehydration in low temperatures without crystal formation. In the beginning of freeze substitution, amorphic water contained in sample is dissolved by an organic solvent (e.g. acetone, ethanol), which also includes chemical fixatives. After dehydration temperature rises to point where is resin embedding possible.

Freeze substitution processor (FSP) is an automatic reagent handling system combined with the Leica EM AFS2, dispenses reagents for freeze substitution. It also provides UV lamp for photopolymerization of acrylic resins.

Types of sample:

cell suspension

cell monolayer

tissue

hydrogel

Application:

cryo-substitution and resin embedding

Resins:

Epoxy resins: Embed 812, Araldite, Durcupan, Spurr, Ultrabed

Acrylic resins: Lowicryl, LR white