Basic Molecular Biology: Nucleic Acid Extraction

Liquid Phase Extraction

When performing liquid-phase nucleic acid extraction, a method called “alcohol precipitation” is used where contaminants such as organic solvents, salts, and proteins are removed from the nucleic acid in solution.

In this method, as the name suggests, alcohol, along with high salt buffer, is used to precipitate nucleic acid out of the solution.

Ethanol and isopropanol are commonly used in this process.

Ethanol is used to remove salts. Isopropanol is required to precipitate nucleic acid.

Add isopropanol and centrifuge to precipitate the nucleic acid as a pellet.

After the supernatant is discarded, add ethanol to remove co-precipitated salts and centrifuge to collect the precipitate. Discard the supernatant.

This nucleic acid pellet is clear, and difficult to observe by eye.

An additional ethanol wash can be completed in order to further purify the nucleic acid.

Discard the ethanol wash solution very carefully as the nucleic acid pellet may dislodge.

After a few washes, remove the residual alcohol by air-drying the pellet.

Re-suspend the nucleic acid in nuclease-free water or a suitable buffer.