



Basic Molecular Biology: Nucleic Acid Extraction: Column-Based Extraction

Column-based extraction is a method that employs selective binding of nucleic acid to a solid matrix such as silica that is packed in a column.

After lysis, apply cell lysate to a column in the presence of a high salt buffer, allowing nucleic acid and nucleic acid binding proteins to absorb to the matrix. Other cellular components and proteins do not bind to the matrix and pass through the column as the lysate is applied.

Complete the sample application and later washing and elution steps by centrifugation, pressure, or vacuum.

After sample application, nucleic acid binding proteins may stay bound to nucleic acid and remain in the column.

Pass a buffer containing a low amount of chaotropic salt through the column to remove these proteins.

Apply a wash buffer to the same column to wash out contaminants in order to improve purity of the eluted nucleic acid.

Finally, apply an appropriate elution buffer of water to release the nucleic acid from the solid matrix into a collecting container.

Link to video job aid: <https://reach.cdc.gov/jobaid/basic-molecular-biology-nucleic-acid-extraction-column-based-extraction>