

## GLYOXAL & AMINOETHYL AGAROSE BEADS

### GENERAL DESCRIPTION

Biomolecules can be immobilized by binding them to a support under conditions that will then determine the characteristics of the complex. Immobilization is used in different industrial processes to produce complexes having considerable stability.

Typical biomolecules for immobilization include:

- **Enzymes**

Enzymes in solution act as catalysts that are very specific to one substrate or one functional group. Stability is increased dramatically by immobilization and this has led to new and more economical industrial uses.

- **Other Ligands**

Many other biomolecules are used in biological and chemical research, for Affinity Chromatography. Examples include Protein A, Protein G, antibodies, antigens and dyes.

ABT offers two different families of immobilization products:

- **Glyoxal Agarose Resins:**

- Glyoxal Agarose Beads (Low Pressure)
- Glyoxal Rapid Run™ Agarose Beads (High Pressure)

- **Aminoethyl Agarose Resins:**

- Aminoethyl Agarose Beads (Low Pressure)
- Aminoethyl Rapid Run™ Agarose Beads (High Pressure)

Both resin types give the biomolecules increased stability through the covalent bonds of the enzyme or ligand to the agarose, thus facilitating recovery and later re-use.

This covalent binding also confers a qualitative advantage compared to resins activated with CNBr, in which the binding is weaker. The choice of Glyoxal or Aminoethyl will depend on the biomolecule to be immobilized, the accessibility of the reactive groups, and the direction/ orientation required for the binding to the support.

ABT offers:

**Glyoxal Agarose Beads Resins:** Supports with an aldehyde group that covalently reacts with the lysine groups in the biomolecules.

**Aminoethyl Agarose Beads Resins:** Supports with an amino group that covalently reacts with acidic amino acids like aspartic acid or glutamic acid.

For these immobilization processes, it is necessary to offer a range of products with different densities of active groups per unit of support. ABT carries the biggest range in the market:

- Very High Density Groups
  - High Density Groups
  - Low Density Groups
- } Glyoxal Agarose Beads



- Low Density Groups
  - Very Low Density Groups
- } Aminoethyl Agarose Beads

With this range, combined with two concentrations of agarose in the beads (4% and 6%), ABT offers resins to immobilize biomolecules of a wide range of sizes and molecular weights. Selection criteria are density of the immobilized biomolecule, catalytic activity and stability.

Selection of the most suitable resin can best be done by a preliminary screening with the corresponding ABT Test Kit.

- Glyoxal Test Kit
- Aminoethyl Test Kit