Informational

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Enzyme and Antibody Immobilization
Aminoethyl and Glyoxal Agarose Beads
General Information

Introduction

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.

Additional Information

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.

Gold Bio offers two different families of immobilization products:

- **Glyoxal Agarose Beads**: Supports with an aldehyde group that covalently reacts with the lysine groups in the biomolecules.
- **Aminoethyl Agarose Beads**: Supports with an amino group that covalently reacts with acidic amino acids like aspartic acid or glutamic acid.

Both types of resins 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.

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

Gold Biotechnology
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Glyoxal Agarose Beads
- Very High Density Groups
- High Density Groups
- Low Density Groups

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

With this range, combined with two concentrations of agarose in the beads (**4%** and **6%**), Gold Bio offers resins to immobilize biomolecules of an incredible range of sizes and molecular weights, providing a selection criteria between density of the immobilized biomolecule, catalytic activity and stability.

Selection of the most suitable resin can best be done by a preliminary screening with one of the corresponding Gold Bio Test Kits:

- **Aminoethyl Complete Test Kit**
- **Aminoethyl Low Density Test Kit**