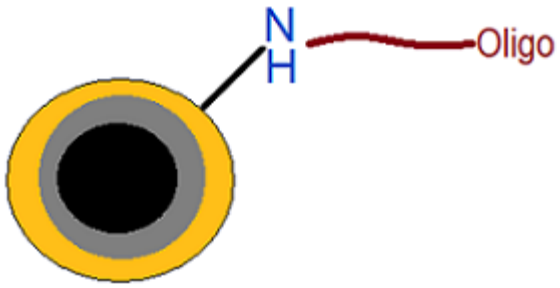
Magnetic Bead Oligo Conjugation

Category	Conjugation Chemistry
Modification Code	Mag-Oligo
Reference Catalog Number	26-7015
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	0



Magentic bead [26-7015-XX] [Mag-Oligo]

Oligo Conjugation to Magnetic Beads for Affinity Matrix

Gene Link also offers oligos covalently linked to non-cleavable poly styrene beads to be used as affinity support for the purification, capture and elution of the complimentary sequences. **Oligo Affinity Support. Click here for Magnetic Bead Conjugation Specifications**

This modification is a post synthesis NHS conjugation to a primary amino group thus an additional modification with an amino group is required. A C6 or C12 amino group can be placed at the 5' or for the 3' end a C3 or C7 amino and for internal positions an amino modified base is used, e.g Amino dT C6.

Oligo Design

A stretch of T's of a length of 15 to 20mer is recommended to be added to the end of the oligo that is conjugated to the magnetic particles to avoid stearic hindrance and to ensure optimum hybridization. **For mRNA binding with poly A tail we recommend the use of Spacer 18 or other appropriate spacer in place of the stretch of T's.**

Yield

200 nmol scale: ~2 mg magnetic bead conjugated to ~1 nmol oligo. 10mg/mL suspension. [0.2 mL]
1 micromolar scale: ~5 mg magnetic bead conjugated to ~2.5 nmol oligo. 10mg/mL suspension. [0.5 mL]
2 micromolar scale: ~10 mg magnetic bead conjugated to ~5 nmol oligo. 10mg/mL suspension. [1 mL]
5 micromolar scale: ~10 mg magnetic bead conjugated to ~5 nmol oligo. 10mg/mL suspension. [2 mL]
10 micromolar scale: ~50 mg magnetic bead conjugated to ~25 nmol oligo. 10mg/mL suspension. [5 mL]
15 micromolar scale: ~75 mg magnetic bead conjugated to ~40 nmol oligo. 10mg/mL suspension. [7.5 mL]

Gene Link offers a wide variety of modifications that enable oligonucleotides to be conjugated to various ligands including solid surfaces with the appropriate functional groups. The most common conjugation chemistry involves oligos modified with a primary amino group; the amino group can be placed at 5' or 3' end or any desired internal position using an amino C6 base. The amino group reacts with N-hydroxysuccinimide(NHS) functional groups to form a stable amide linkage; the reaction efficiency varies from 50% to 90% depending on the ligand activated NHS group.

The requirement for this conjugation is the availability of the desired ligand or solid surface in an activated NHS form for conjugation to the amino modified oligonucleotide.

Material Supplied & Handling

1. The oligo conjugated to magnetic beads are supplied at 10mg/mL.
2. The Oligo-Magnetic bead conjugation varies between 0.3-0.5 nmol amine oligo/mg magnetic bead. Refer to specification sheet supplied with product and label on the tube.
3. Wear appropriate personal protective equipment and clothing including lab coat, safety glasses and gloves.
4. The conjugated oligo-magnetic bead is supplied in High Salt Buffer (0.5 M NaCl, 50 mM Tris-HCl pH 7.5 and 0.02% sodium azide.
5. Sodium Azide Note: Dilute solutions of sodium azide are used in research laboratories as a preservative. This use generally presents no extraordinary dangers to the user, but it should be noted that weak solutions of sodium azide (0.1 to 1.0%) are eye and skin irritants.
6. Refer to the oligo specification sheet for the exact nmol oligo/mg of magnetic bead.

Storage

DO NOT CENTRIFUGE. DO NOT FREEZE. Store the supplied oligo-magnetic bead at 4oC.

Application

1. Do not centrifuge the beads as it will collapse and form aggregates that will be difficult to re-suspend.
2. Use magnetic stand for separating the beads from the solution for all applications.
3. The material supplied is in 0.02% sodium azide (High Salt Buffer (0.5 M NaCl, 50 mM Tris-HCl pH 7.5 and 0.02% azide). Handle it with caution.
4. Handle it with caution. Before initial use, perform a few washes in the binding buffer of choice to equilibrate the new binding buffer and removal of azide.
5. For all hybridization/annealing the target must be denatured just as we do for PCR. Short protocol; heat denature target DNA/RNA at 95 degrees while maintaining separately the magnetic beads at 60 degrees in high salt buffer. Add your denatured target DNA/RNA while at 95 degrees to the magnetic beads. Let it cool to room temperature or by decreasing the temperature by 2 degrees every minute.
6. For DNA/oligo binding & release. Use High Salt (0.5 M NaCl, 50 mM Tris-HCl pH 7.5) for binding and washing, and Low Salt (50 mM Tris-HCl pH 7.5) or sterile water for elution. Elution at 60oC is preferable.
7. For RNA/oligo binding & release. Use High Salt (0.5 M NaCl, 50 mM Tris-HCl pH 7.5) for binding and washing. For RNA elution use RNase free water or preferably 1 mM Sodium Citrate pH 6.4. **Click this link**
Elution at 60oC is preferable.