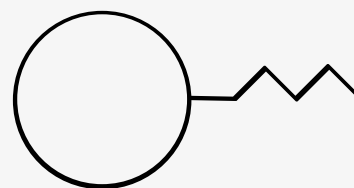


Pre-activated resins

Pre-activated resin enables successful, convenient immobilization of ligands without the need for complex syntheses or special equipment. We have developed two different pre-activated resins in which the bromohydrin active group reacts with thiol, amine and hydroxyl groups of the substance to be coupled. Two different resin porosities are available to facilitate optimized coupling of ligands of different sizes, or to optimize the prepared affinity resin for target molecules of different sizes.

Target molecules

To prepared customized chromatography resin by coupling substances with thiol, amine and hydroxyl groups.



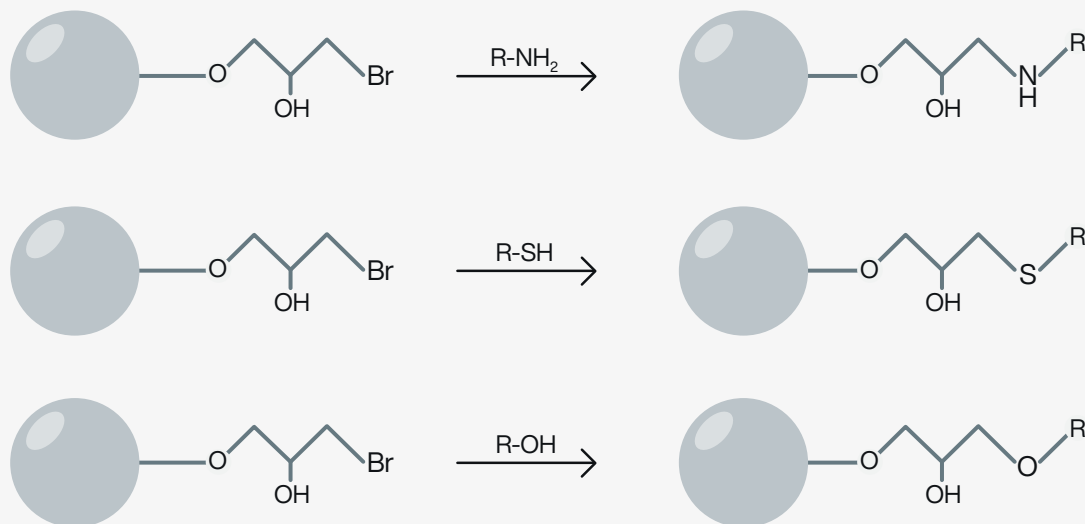
WorkBeads 40/1000 ACT WorkBeads 40/10 000 ACT

- Ideal for coupling of specific customer designed resins
- Stable covalent linkage
- Suitable for coupling of ligands containing thiol, amine and hydroxyl groups
- Two different porosities for optimized results
- WorkBeads 40/1000 ACT is available in GoBio Mini 1 mL and 5 mL prepacked columns



Applications

Reaction scheme for coupling from top to bottom, primary amine, thiol and alcohol to bromohydrin activated resin.



Type of ligand and most suitable coupling conditions

Type of ligand	Functional group of ligand	Coupling conditions
Organic molecules, peptides	Thiol (Sulfhydryl) (-SH)	pH > 7 and higher
Organic molecules, peptides	Amines ¹ (-NH ₂ , -NH-, -N)	pH > 8 and higher ²
Proteins, polypeptides	Thiol (Sulfhydryl) (-SH)	pH 7 and higher
Proteins, polypeptides	Primary amino (-NH ₂)	Carbonate buffer pH 8 and higher ³
Substance stable at high pH	Hydroxyl (-OH)	pH > 12 ⁴

¹ Substances containing primary, secondary and tertiary amines.

² Alkaline ligands used in excess may give high enough pH for the reaction to take place. Dissolve it in distilled water and let the basicity of the ligand determine the coupling pH.

³ Sufficient coupling without denaturation of sensitive polypeptides and proteins. Coupling reaction at a lower temperature is also possible.

⁴ High pH is required due to the low nucleophilicity of the hydroxyl group.

Technical specifications

	WorkBeads 40/1000 ACT	WorkBeads 40/10 000 ACT
Matrix	Rigid, highly cross-linked agarose	Rigid, highly cross-linked agarose
Average particle size ¹ (D _{v50})	45 µm	45 µm
Reactive groups	Bromohydrin	Bromohydrin
Exclusion limit	1200 kDa (globular proteins)	10 000 kDa (globular proteins)
Maximum flow rate ²	600 cm/h	600 cm/h
Reactive-groups content	200 µmol/mL	200 µmol/mL
Chemical stability (before coupling ³)	Buffers pH < 8.0	Buffers pH < 8.0
Chemical stability (after coupling ⁴)	Compatible with all standard aqueous buffers used for protein purification, 1 M NaOH, 30% isopropanol or 70% ethanol. Should not be stored at < pH 3 for prolonged time.	
pH stability ⁴	2 to 13 (after coupling)	2 to 13 (after coupling)
Storage ⁵	2 to 25°C in 20% ethanol	2 to 25°C in 20% ethanol

¹ The median particle size of the cumulative volume distribution.

² Determined in water using a 10 × 300 mm column. Note: When doing a purification the optimal flow rate during binding is depending on the sample.

³ Avoid substances containing thiol and amino groups. Substances containing hydroxyl groups will only react if deprotonated. The unreacted resin is generally stable in alcohols at neutral pH.

⁴ Agarose matrix and linker. Stability of the coupled substance may differ.

⁵ The choice of storage conditions for the coupled resin depends on the nature of the ligand.

Ordering information

Product name	Pack size	Article number
WorkBeads 40/1000 ACT	50 mL	40 400 001
	300 mL	40 400 003
	1L	40 400 010
	5 L	40 400 050
WorkBeads 40/10 000 ACT	50 mL	40 450 001
	300 mL	40 450 003
	1L	40 450 010
	5 L	40 450 050



More information

Data Sheet, DS 40 400 010

WorkBeads 40/1000 ACT, WorkBeads 40/10 000 ACT,
GoBio Mini ACT

→ bio-works.com/product/activated-resin