

WorkBeads™ 40 ACT

WorkBeads 40/10 000 ACT

Activated Media for laboratory and process scale Affinity chromatography with User's choice of ligand.

- **Faster to results; simple coupling procedure**
- **Stable at ambient temperature, aqueous coupling solution and neutral pH**
- **Suitable for coupling ligands containing Sulphydryl-, Amino- or Hydroxylgroups**

Media Description

WorkBeads 40 ACT and **WorkBeads 40/10 000 ACT** preactivated separation media are produced from agarose using a cross-linking method that result in a highly porous and physically stable agarose matrix. Agarose based matrices have been successfully used for decades in biotechnology research and in the industrial purification of proteins. Agarose is proven to be exceptionally compatible with natural biomolecules such as proteins, DNA, carbohydrates etc. The material shows minimal non specific interaction due to the hydrophilic nature of agarose. Unlike matrices made from synthetic polymers, agarose does not have micro pores that can contribute to local pH variations in the microenvironment in the column which lead to distorted separations.

WorkBeads 40 ACT and **WorkBeads 40/10 000 ACT** are activated according to the Bromohydrin method. This activation method is based upon well known chemistry and allows you to perform the coupling chemistry in aqueous solutions.

Matrix-OCH₂CH(OH)CH₂Br + Nucleophil (i.e. -SH, -NH₂ or -OH) --> Matrix-OCH₂CH(OH)CH₂-Nu

WorkBeads 40 ACT and **WorkBeads 40/10 000 ACT** are supplied as an aqueous suspension with 20% ethanol as preservative. After washing, the gel is immediately ready for use. As no toxic chemicals are involved and the WorkBeads 40 ACT products are stable at room temperature the coupling procedure can, as long as your application so allows, easily be performed on your bench and at room temperature.

Applications

WorkBeads 40 ACT and **WorkBeads 40/10 000 ACT** are ready for use.

Proteins or other molecules with free amino and sulfhydryl I groups will couple easily to. Just add the ligand to the suspension, stir and incubate over night.

Due to the very high porosity WorkBeads 40/10 000 ACT is ideal for coupling large entities like immunoglobulins. The exclusion limit is more than 100000 kD.

Media description

WorkBeads 40 ACT for coupling small molecules and peptides

WorkBeads 40 ACT	
Agarose content %	7
Flow rate at 20 cm bed height and 5 Bar; cm/h	600
Average particle size, μm	45
Degree of substitution approx; $\mu\text{mol/ml}$	250
Activated groups	Bromide

WorkBeads 40/10 000 ACT for coupling immune globulins and other large entities

WorkBeads 40/10 000 ACT	
Agarose content %	5
Flow Rate at 20cm bed height and 5 Bar; cm/h	600
Average particle Size; μm	45
Degree of substitution approx; $\mu\text{mol/ml}$	150
Activated groups	Bromide

Coupling conditions and selection of coupling buffers

Type of ligand	Functional group of ligand	Coupling buffers
Organic molecules, peptides	Sulphydryl (-SH)	pH 7 and higher. Sensitive ligands can be coupled at pH 7. Better yield will be obtained at a higher pH.
Organic molecules, peptides	Amino (-NH ₂) R2-NH R3-N	When the ligand is used in excess, dissolve the ligand in distilled water and let the basicity of the ligand determine the coupling pH
Proteins polypeptides	Sulphydryl (-SH)	pH 7 and higher. Sensitive ligands can be coupled at pH 7 but a better yield will be obtained at a higher pH.
Proteins polypeptides	Primary amino (-NH ₂)	Coupling yield will increase at higher pH. A carbonate buffer of pH 8-8.5 gives often sufficient coupling without denaturation of sensitive polypeptides and proteins. Another possibility is to run the coupling reaction at lower temperature
All types	Hydroxyl (-OH)	The low nucleophilicity of the hydroxyl group demands coupling condition at very high pH (pH > 12). At a pH > 12 cross-linking and hydrolysis will compete with the coupling procedure

Ordering information

Product name	Pack size	Article number
WorkBeads 40 ACT	Bulk Media – 50 ml	40 400 001
WorkBeads 40 ACT	Bulk Media – 300 ml	40 400 003
WorkBeads 40 ACT	Bulk Media – 1 L	40 400 010
WorkBeads 40 ACT	Bulk Media – 5 L	40 400 050
WorkBeads 40/10 000 ACT	Bulk Media – 50 ml	40 450 001
WorkBeads 40/10 000 ACT	Bulk Media – 300 ml	40 450 003
WorkBeads 40/10 000 ACT	Bulk Media – 1 L	40 450 010
WorkBeads 40/10 000 ACT	Bulk Media – 5 L	40 450 050

Order direct on info@bio-works.net or through your local distributor.



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