Streptavidin Coated Yttrium Silicate SPA Beads

Product Number: RPNQ0012 (250mg)

Warning

For research use only.
Not recommended or intended for diagnosis of disease in humans or animals.
Do not use internally or externally in humans or animals.

Storage

Streptavidin-coated Yttrium Silicate SPA beads are supplied as a lyophilized solid containing 10% sucrose by weight. This material should be stored protected from light, at 2–8°C.

Expiration

Once Reconstituted, the beads are stable for up to 7 days when stored in the appropriate conditions.

Safety Warnings and Precautions

All chemicals should be considered as potentially hazardous. We therefore recommend that this product is handled only by those persons who have been trained in laboratory techniques and that it is used in accordance with the principles of good laboratory practice. Wear suitable protective clothing such as laboratory overalls, safety glasses and gloves. Care should be taken to avoid contact with skin or eyes. In the case of contact with skin or eyes wash immediately with water. See material safety data sheet(s) and/or safety statement(s) for specific advice.

CAUTION: For use with radioactive material.
This product is to be used with radioactive material. Please follow the manufacturer's instructions relating to the handling, use, storage, and disposal of such material.

Quality Control

Biotin binding capacity (as determined by binding of [3H]Biotin to bead) is always greater than 200 pmoles/mg bead and is typically in the range 200-300 pmoles/mg bead. However, the binding capacity of [3H]Biotin is not necessarily indicative of the binding capacity of Biotin labelled substrates. The effective binding capacity of Biotin labelled substrates should be optimized experimentally by the user.

BEAD RECONSTITUTION

Before use the SPA beads should be reconstituted in a buffer appropriate for the particular assay to be performed. The SPA beads should be mixed to ensure a homogeneous suspension while pipetting. This may be done by

continuous agitation with a magnetic stirrer. Reconstituted beads can usually be stored at 2–8°C for up to seven days. DO NOT FREEZE.

PLEASE NOTE: The Streptavidin SPA beads have been freeze-dried from a 1% sucrose solution. Anti-microbial agents are not included in this reagent. The user should therefore be aware that microbial contamination may occur when the reconstituted beads are stored for prolonged periods. If anti microbial agents (eg Sodium Azide) are added on storage, then it remains the responsibility of the user to evaluate the effects of the added agent on the assay.

ASSAY CONDITIONS

Streptavidin SPA beads are designed for the use in assay systems employing a biotinylated acceptor molecule or substrate and can be used in either capture or cleavage assays formats. The binding of directly in indirectly radiolabelled biotinylated compounds to the Streptavidin SPA beads brings the isotope into close proximity with the scintillant. This allows the emitted radiation (beta particles for [3H] and [33P] or Auger electrons for [125I] to stimulate the scintillant to emit light. Any unbound radiolabelled ligand is not in close enough proximity to the scintillant to allow such energy transfer and hence no signal is generated. Light emitted by stimulated SPA beads can be detected by either conventional scintillation counters or multidetector instruments. When using high energy isotopes such as [33P], there is potentially a risk of high non-specific proximity (excitation of bead fluor by unbound isotope) counts. The rapid settling of the Yttrium Silicate beads circumvents the need to spin beads down in a centrifuge in order to minimize these non-specific effects. To achieve optimal counts excess Streptavidin SPA bead should be present in order to bind all the biotinylated molecules in the assay. The quantity of bead required may be calculated from the [3H]Biotin binding data supplied with each batch of reagent, but it is recommended that it is determined empirically. It remains the responsibility of the user to optimize the amount of Streptavidin SPA bead required for each assay, the incubation time required for each assay and the incubation time required to achieve complete binding of the biotinylated molecules. In general, Yttrium Silicate SPA beads will give approximately 60-70% of the cpm expected from conventional liquid scintillation counting, but the SPA counts obtained will depend on the isotope used, the type of counter used and the absolute efficiency of the instrument.
Samples which are colored may require color quench correction.

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