

Polylysine Coated Yttrium Silicate SPA Beads

Product Number: RPNQ0010

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

Polylysine coated yttrium silicate SPA beads are supplied as a lyophilized solid containing 5% sucrose by weight. This material should be stored, protected from light, at 2-8°C. Under the above conditions this material is expected to be stable for 6 months.

Expiration

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

Safety Warnings and Precautions

Contains yttrium silicate. 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

Each batch of polylysine coated yttrium silicate SPA beads is tested for functional performance in a receptor ligand binding assay.

BEAD RECONSTITUTION

Before use the beads should be reconstituted in a buffer appropriate for the particular assay to be performed. Reconstituted beads can usually be stored at 2–8°C for up to seven days. **DO NOT FREEZE.**

PLEASE NOTE: Avoid exposure of yttrium silicate bead types and finished assays containing yttrium silicate beads to halogen light. Exposure of yttrium silicate beads to halogen light can cause elevated counts due to phosphorescence. If elevated counts due to light exposure are observed, place the assay in the dark for a minimum of four hours before recounting. Polylysine coated yttrium silicate SPA beads have been freeze-dried from a 1% sucrose solution. Antimicrobial 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 antimicrobial 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

Polylysine coated yttrium silicate SPA beads, when coupled to membrane bound receptors are designed to be used in ligand binding assays. The beads, composed of yttrium silicate, derive their scintillation properties from cerium ions trapped within its crystal lattice structure and are coated with the cationic polymer, polylysine. Cellular membranes have a net negative charge and have been shown to bind to polylysine. This interaction allows receptor bearing membranes to be immobilized on to the SPA bead.

The binding of radiolabelled ligands to such immobilized receptors brings the isotope into close proximity to the scintillant which is incorporated within the bead. This allows the emitted radiation (beta-particles for [^3H] or Auger electrons for [^{125}I]) 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.

It remains the responsibility of the user to optimize the amount of type 1 polylysine SPA beads required for each ligand binding assay. To achieve optimal results excess polylysine coated yttrium silicate SPA bead should be present in order to capture all of the receptors present in the assay tube. The amount of receptor preparation together with the radiolabelled ligand being used need to be optimized for each assay.

Yttrium silicate SPA beads will tend to settle rapidly on standing. Therefore, during dispensing steps it is important that these beads are stirred continuously using a magnetic stirrer to ensure a homogeneous suspension.

In general, polylysine coated yttrium silicate SPA beads will give approximately 35-55% 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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RPNQ0010-R Rev01

The logo for Revvity, featuring the word "revvity" in a lowercase, sans-serif font. The letters are black, and the "v"s are stylized with a slight curve.