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ProductInformation

ALBUMIN - 10 nm COLLOIDAL GOLD LABELED

Product Number **A 0594**
Storage Temperature 2 to 8 °C

Product Description

Albumin - 10 nm Colloidal Gold Labeled is prepared using bovine albumin (Product Number A 0281) that is adsorbed to colloidal gold. It is suitable for use as a positive or negative control.

Colloidal gold is an electron-dense, non-fading marker useful as a probe in electron microscopy (TEM and SEM), light microscopy, and blotting.[1] It requires no additional processing for detection, but in some applications the signal can be enhanced by reaction with silver.[2,3] It can be complexed with biomolecules by strong, non-covalent interactions.[4]

Generally, particles < 15 nm are most useful in transmission electron microscopy (TEM) and for applications where access to the probe may be hindered by larger particles.[5] Particles >15 nm are more suitable for scanning electron microscopy (SEM), light microscopy, and blotting.

Reagent

Albumin - 10 nm Colloidal Gold Labeled is supplied as a clear, dark red, collodial suspension in 0.01 M phosphate buffered saline, pH 7.4, containing 0.02% polyethylene glycol, 20 % glycerol and 15 mM sodium azide.

Particle size: 10 nm (Mean: 8 to 12 nm, the coefficient of variance of the particle size is <15% of the mean particle size).

Monodispersed with ≥ 60 % singlets

Gold conjugates are processed, after adsorption with proteins, to remove free protein and large aggregates. The concentration is expressed as absorbance at the absorption maximum (A_{520}).[2,6]

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution.
Consult the MSDS for information regarding hazardous and safe handling practices.

Preparation Instructions

Gold-conjugated proteins should be diluted for most applications. It is recommended that the diluent buffer contain 0.15 M saline, buffered at pH 6 to 8, and 0.05 % Tween 20 to minimize background. Additional buffer supplements may be required for certain applications. Prior to application, allow the conjugate to equilibrate for at least 20 minutes in lower glycerol content. The optimum concentration of the conjugate should be determined empirically; a typical range is A_{520}=1.0 to 0.05 (1:2.5 to 1:50 dilution). Incubation times range from 0.5 to 12 hours.

Storage/Stability

Product may be stored for extended periods as packaged (undiluted) at 2 to 8 °C. Working dilution samples should be discarded if not used within 12 hours.

Procedure

Binding is evaluated by a "dot blot" assay modified from the method of Brada and Roth.[2]. Serial dilutions are prepared from a 1 mg/ml positive control protein solution. One µl of each solution is adsorbed onto a nitrocellulose membrane and allowed to dry. The gold conjugate is diluted to A_{520} = 0.25 with 0.01 M phosphate buffered saline, pH 7.4, containing 0.02% polyethylene glycol and 0.05 % Tween 20. The spotted membranes are incubated with the gold for 1 hr. at 25 °C. The detection limit is the minimum amount of protein that can be detected as a pink-red spot on the membrane.

Product Profile

Albumin - 10 nm Colloidal Gold Labeled will detect ≤ 17 ng of anti-bovine albumin, affinity isolated antibody (Product Number B 7276) by dot blot.

References

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4. Geoghegan, W.D., et al., Immunol. Comm., **7**, 1 (1978).
5. Slot, J.W., and Geuze, H.J., J. Cell. Biol., **90**, 533 (1981).
6. Tolson, N.D., et al., J. Microsc., **123**, 215 (1981).

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