abcam

Product datasheet

Gold-Maleimide Conjugation Kit (10nm, 20 OD) ab269903

2 Images

Overview

Product name Gold-Maleimide Conjugation Kit (10nm, 20 OD)

Product overview Gold-Maleimide Conjugation Kit (10nm, 20 OD) (ab269903) allows thiolated molecules (e.g. antibodies, Fab' fragments, or other sulfhydryl-containing biomolecules) to be covalently attached to ultra-stable Gold nanoparticles at high OD, quickly and easily. The conjugation reaction is initiated by adding a solution of the thiol-activated molecule to the Gold-Maleimide nanoparticles. The hands-on time for the procedure is about 5 minutes and the conjugate is ready to use within 1 hour.

The kit also allows conjugation of oligonucleotides to Gold nanoparticles. The oligonucleotides must be between 10 and 120 base pairs in length and contain a terminal sulfhydryl group, which must be added during synthesis. All commercial oligo suppliers offer this modification.

The Gold nanoparticles that come with the kit have a proprietary protective coating that shields the biomolecule from the metal surface, thus eliminating metal-antibody interactions and reducing the risk of sub-optimal antibody performance, such as loss of affinity or denaturation. Moreover, the covalently attached molecule is not prone to dissociation which is a major problem with direct thiol-to-gold metal conjugations.

Benefits of Gold-Maleimide Conjugation Kit (10nm, 20 OD):

Easy protocol – conjugate ready to use in 1 hour, with only 5 minutes hands-on time

Oriented labelling for oligonucleotides and Fab' fragments

Proprietary surface coating prevents metal-protein interactions, and enables covalent attachment to the gold – stable conjugates formed

Uniform spherical shape and narrow size distribution – consistent high quality and batch to batch reproducibility

Notes

This product is manufactured by Expedeon, an Abcam company, and was previously called InnovaCoat® GOLD – Maleimide Site Specific Labeling Kit (10nm). 272-0005 is the same as the 3 x 5 µg size. 272-0015 is the same as the 1 x 50 µg size.

Amount and volume of antibody for conjugation to Gold nanoparticles (10 nm, Maleimide).

Kit size	*Recommended amount of biomolecule*	*Recommended biomolecule volume*
3 x 5 µg	5 µg	45 µL
1 x 50 µg	50 µg	450 µL

Buffer requirements:

The biomolecule to be conjugated should ideally be in PBS, MOPS or HEPES buffer. Free thiols (e.g. β-mercaptoethanol, DTT) must be excluded from samples and maleimide reaction buffers by desalting, because they will compete for coupling sites on the gold nanoparticles. A desalting step post reduction is mandatory if thiols are used to reduce the disulphide bonds.

For incompatible buffers and low antibody concentrations, use our rapid **antibody purification and concentration kits** for Nanoparticles. To learn more about incompatible buffers, please refer to the protocol booklet.

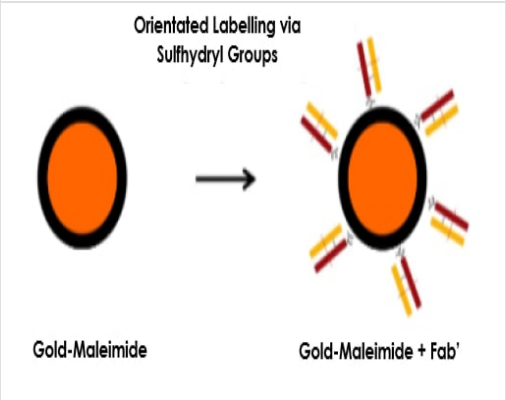
Properties

Storage instructions

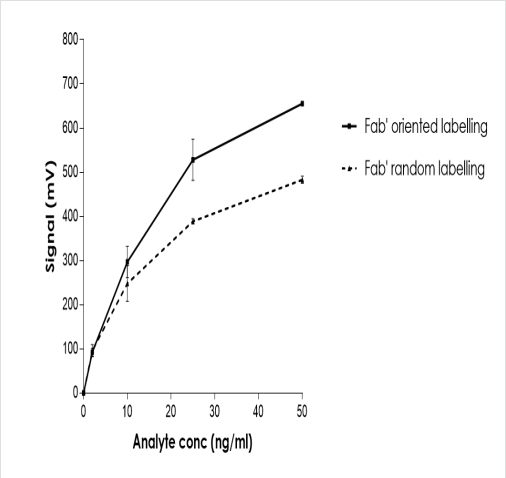
Store at -20°C. Please refer to protocols.

Components	3 x 5 µg	1 x 50 µg
ab273973 - Diluent reagent	1 x 1500µl	1 x 1500µl
ab273980 - Gold mix (Lyophilized)	3 x 5µg	1 x 50µg
ab273974 - Quencher reagent	1 vial	1 vial
ab273975 - Reaction Buffer	1 x 200µl	1 x 200µl

Images



Orientated Labelling via Sulfhydryl Groups



Lateral Flow Assay

Lateral flow assay demonstrates increased performance of orientated Fab' conjugation with the Gold-Maleimide Conjugation Kits compared to random labelling with the Gold Conjugation Kits. All components of the lateral flow assay are identical with the exception of the method used to conjugate the Fab' with the Gold-Maleimide kits or Gold Conjugation Kits. Fab' fragments were derived from the same antibody (Goat anti-Rabbit, polyclonal). The analyte is a Rabbit IgG, and the Capture antibody on the T-line is Goat anti-Rabbit, polyclonal.

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