

SHS-biotin (or biotin~protein, biotin~NA, biotin~peptide) Binding Protocol

Ocean NanoTech's SHS is a group of water soluble iron oxide nanocrystals with amphiphilic polymer coating. Their surface functional group is streptavidin. The zeta potential of SHS is from -20mV to -40mV. The thickness of the total organic layers is about 4 nm. The hydrodynamic size of the nanocrystals is about 8-10 nm larger than their inorganic core size measured by TEM. The streptavidin molecules are linked to polymer. SHS is very stable in most buffer solutions.

SHS can be conjugated to biotinylated molecules such as protein, DNA and peptide. For the reactions to link biotinylated molecules onto SHS, it is **very necessary** that only **one biotin** be linked on each biomolecule. *Otherwise, the nanocrystals will aggregate.*

Materials required:

- Ocean NanoTech's catalog # SHS
- Ocean NanoTech's catalog # WB
- Ocean NanoTech's catalog # BBB or BBG
- **Mono-biotinylated**~biomolecule (biotin~X): **THIS IS A REQUIREMENT**
- Pipettes for delivering 100 μ L to 1 mL volumes
- Vortex mixer capable of securing 1.5 mL tubes for incubations
- Test tubes and standard laboratory disposables
- 4°C Refrigerator
- Ocean NanoTech's SuperMag Separator Series

Procedure:

1. Pipet 100 μ L of the SHS into a low protein binding centrifuge tube. (Note: There can be as many as 30 streptavidin per nanoparticle).
2. Add 100 μ L of biotin~X (X represent anything that is attached to the biotin such as antibodies, DNA, etc such that there is only one biotin per molecule) and mix well.
3. Incubate at room temperature for 30 min with constant mixing.
4. Purify through magnetization with Ocean NanoTech's SuperMag Separator Series.
5. Wash with 200 μ L of Ocean NanoTech's WB once.
6. Purify through magnetization with Ocean NanoTech's SuperMag Separator Series.
7. Block with 200 μ L of Ocean NanoTech's super blocker BBB once.
8. Purify through magnetization with Ocean NanoTech's SuperMag Separator Series.
9. Wash again with 200 μ L of Ocean NanoTech's WB.
10. Purify through magnetization with Ocean NanoTech's SuperMag Separator Series.
11. Store at 4°C until use.

The conjugates can be stored for up to 2 months in the wash/storage buffer at 4°C.

Related Ocean NanoTech Products

Visit our web site for additional information related to this product including the following items: SHP, SHA, Blocking buffers (Catalog # BBB and BBG), QSH, QSA, Wash Buffer (WB)



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Current versions of product instructions are available at www.oceannanotech.com. For a faxed copy, call 479-431-4130 or 479-751-5500.

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