

Technical Specification of Iron Oxide Nanocrystals with Streptavidin Surface

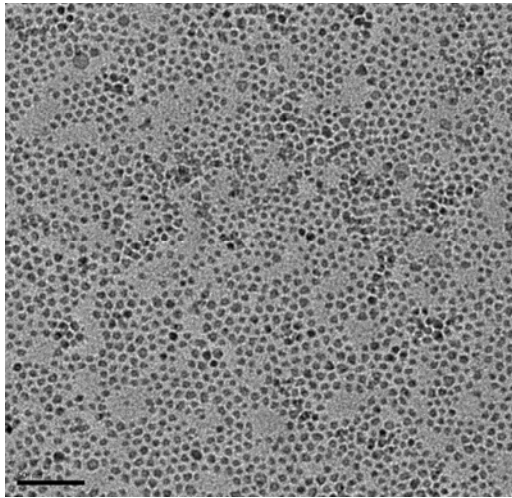
Description: SHS is a group of water soluble iron oxide nanocrystals with amphiphilic polymer coating. Their surface functional group is streptavidin. The zeta potential of SHS is from -20mV to -40mV. The thickness of the total organic layers is about 4 nm. The hydrodynamic size of the nanocrystals is 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 biotylated molecules such as protein, DNA and peptide. For the reactions to link biotylated molecules onto SHS, it is necessary that only one biotin be linked on each biomolecule. Otherwise, the nanocrystals will aggregate. Please refer to our Biotylated Protocol to tag one biotin on each antibody.

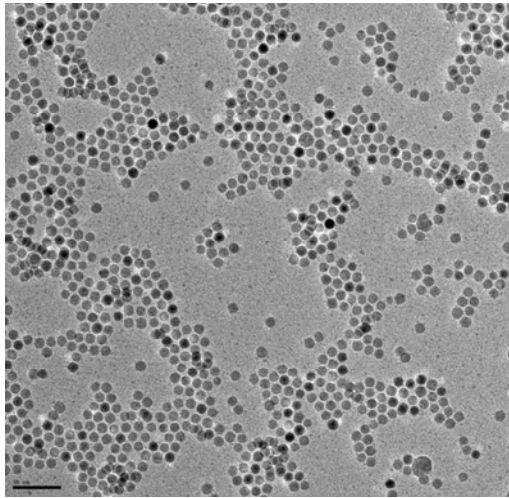
Catalog number:	SHS
Product name:	Iron oxide nanocrystals in water with streptavidin surface.
Solvent:	Borate (0.05 M, pH 7.4) with 1 mg/mL BSA, 0.02% NaN ₃
Storage:	4°C; Do not freeze.
pH stability:	5-10
Buffer stability:	Stable in Borate, Tris, HEPES, PBS, etc.
Shelf life:	3 months
Concentration:	1 mg/mL (Fe)

IO size (nm):	10	15	20	25	30
Size tolerance (nm):	2.5	2.5	2.5	2.5	2.5
Size distribution:	<5%	<5%	<5%	<5%	<5%
Molar concentration (uM) of 1 mg/mL (Fe):	0.86	0.25	0.11	0.054	0.031
Structure:	Maghemite	Magnetite			
Chemical Formula:	Fe ₂ O ₃	Fe ₃ O ₄			

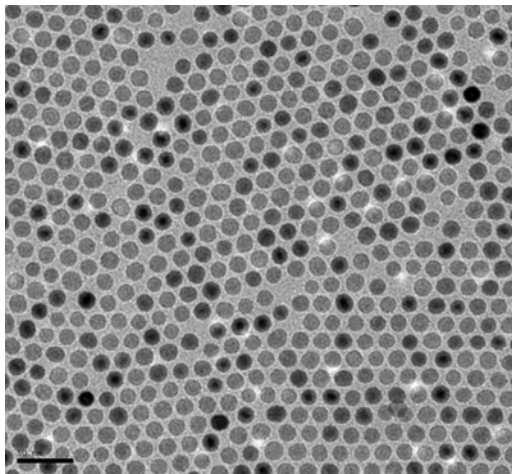
TEM image of 5 nm IO nanocrystals



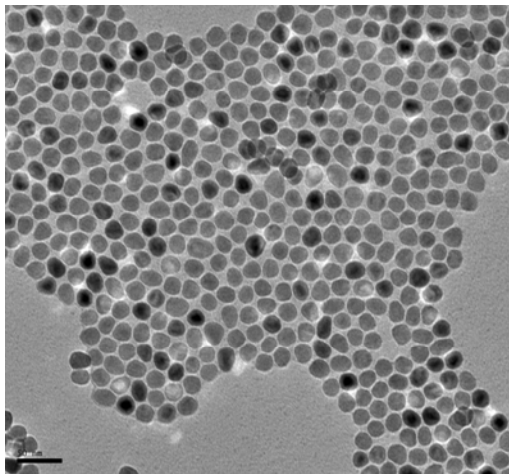
TEM image of 10 nm IO nanocrystals



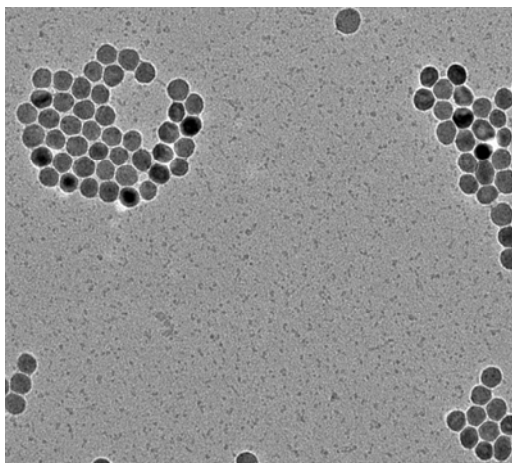
TEM image of 15 nm IO nanocrystals



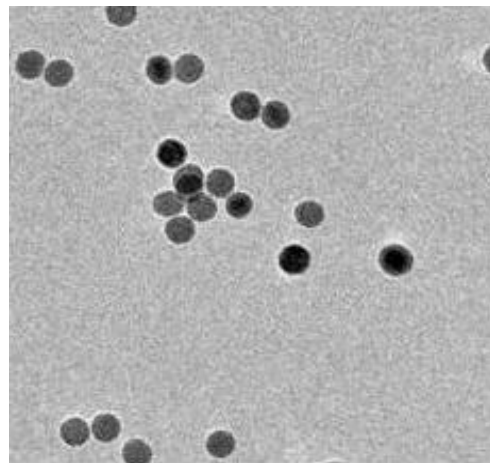
TEM image of 20 nm IO nanocrystals



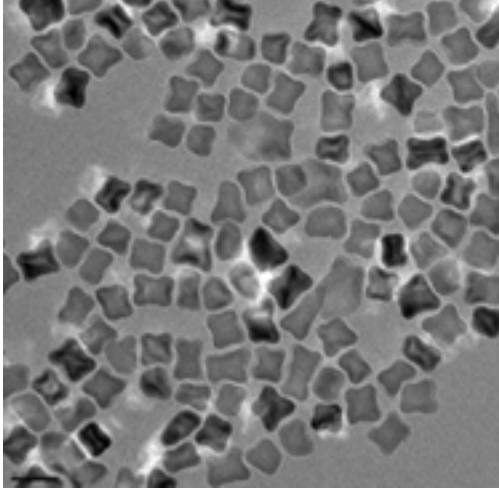
TEM image of 25 nm IO nanocrystals



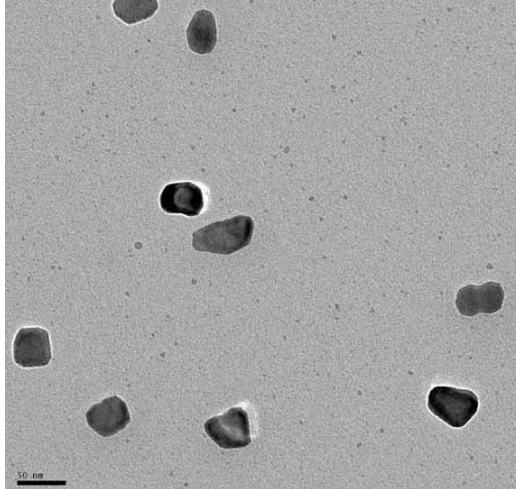
TEM image of 30 nm IO nanocrystals



TEM image of 40nm IO nanocrystals



TEM image of 50nm IO nanocrystals



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