

PRODUCT DATA SHEET

Size Reference Gold Nanoparticles for Flow Cytometry

Description

Flow Cytometry is a commonly used technique in many biological and clinical assays to evaluate cells and particles with sizes of 1 μm and above. However, more advanced flow cytometers are now capable of analyzing small molecules down within the nanometer range. This allows for the study, and use of engineered nanoparticles, viruses and small bacteria not traditionally possible. Cytodiagnosics Size Reference Gold Nanoparticles are specifically designed for the optimization of flow cytometer settings, performance and evaluation of particles or organisms in the 50nm – 400nm range.

In flow cytometry, photons scattered by gold nanoparticles at a 90 degrees angle are collected as Side Scatter (SSC), see figure 1 below. Scattering of photons by gold nanoparticles is proportional to their diameter. The higher scattering efficiency of larger gold nanoparticles allows them to be resolved from smaller diameter particles using side scatter alone. The diameter of our Size Reference Gold Nanoparticles for Flow Cytometry are verified by Transmission Electron Microscopy (TEM) and have low coefficients of variation (<10%) allowing even a mixture of different sized gold nanoparticles to be resolved with good resolution using flow cytometry.

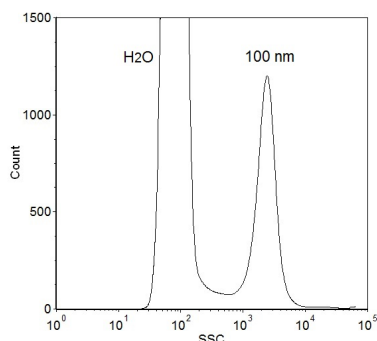


Figure 1. Side-Scatter Histogram of 100 nm Size Reference Gold Nanoparticles (Cat #GFC-100-1ML). The data was obtained on a Partec Flow Cytometer.

Contents

The product is supplied as a 1 mL concentrate, sufficient for approximately 100 tests.

Storage/Stability

This product should be stored at room temperature and is stable for at least 6 months.

Procedure

Note: our Size Reference Gold Nanoparticles for Flow Cytometry have been optimized on and for Partec Flow Cytometers. The optimal working conditions and performance may vary on other manufacturers instruments.

1. Gently vortex or agitate concentrate to re-suspend any particles that may have settled over time.
2. Aliquot 10 μL of particle solution and adjust to 2 mL with ddH₂O. Use immediately. Dilution of the Stock Concentrate destabilizes the Gold Nanoparticles causing aggregation over time.
3. Inject into the flow cytometer with an injection speed of 0.5 microliters/second.
4. Collect data for several seconds until particle peak stabilizes.
As a good starting point, adjust the voltage of SSC until the background/H₂O peak is located to the left of the logged scale.
5. Gate on the particle peak and record the median value.
6. Inject your sample to be tested at the same injection rate and SSC voltage.
7. When the peak stabilizes, gate on the sample peak and record its median value.
8. Compare the SSC value of your sample to the value of the Size Reference. Size Reference Gold Nanoparticles of a different size may be required to more accurately determine the size range of your sample.

Note: to achieve the best accuracy, the concentration of the sample should be as low as possible, at which the sample is able to produce a clear and stable peak. A higher than optimal sample concentration may cause a “swarming” effect and produce misleading results.



Product Safety and Handling

This product is for R&D use only, not for drug, household, or other uses. Please review the material safety datasheet (MSDS) available online for proper safety and handling procedures.

Ordering Information

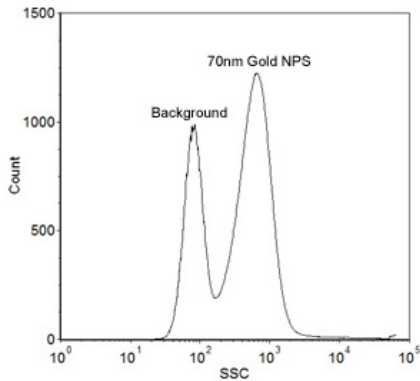
For ordering call 866-344-3954 or visit us online.

Catalog Number	Product Name	Quantity
GFC-70-1ML	70nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-80-1ML	80nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-90-1ML	90nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-100-1ML	100nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-150-1ML	150nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-200-1ML	200nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-250-1ML	250nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-300-1ML	300nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-400-1ML	400nm Size Reference Gold Nanoparticles for Flow Cytometry	1ml
GFC-KIT-01	Size Reference Gold Nanoparticle Kit, Small Size Range (70nm, 100nm, 150nm and 200nm)	4 x 1ml
GFC-KIT-02	Size Reference Gold Nanoparticle Kit, Large Size Range (100nm, 200nm, 300nm and 400nm)	4 x 1ml

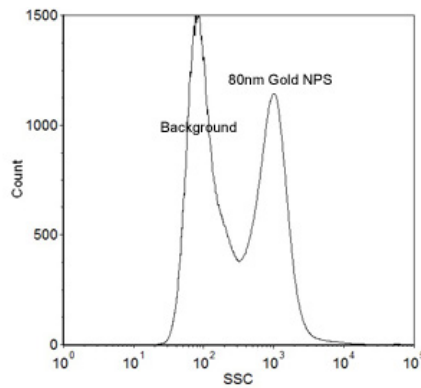
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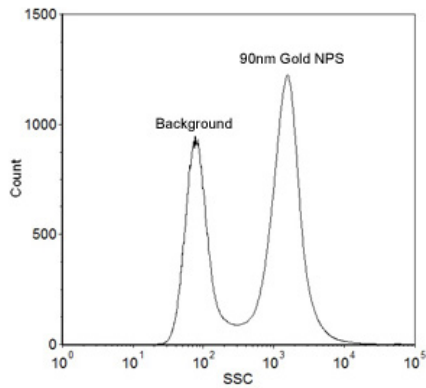
Appendix A: SSC Histograms of our available Size Reference Gold nanoparticles for Flow Cytometry.



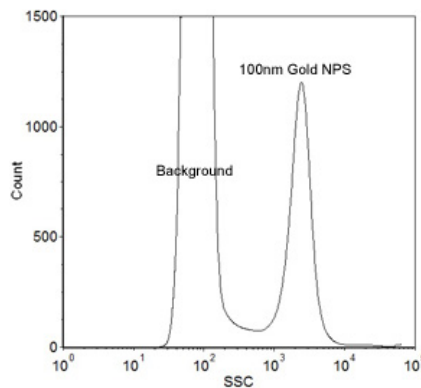
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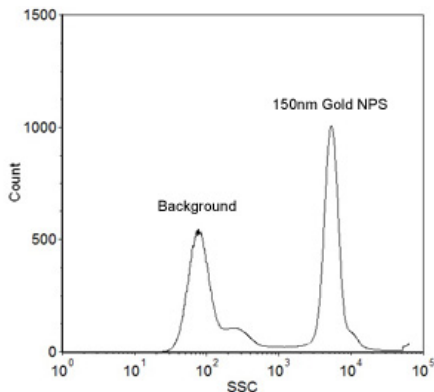
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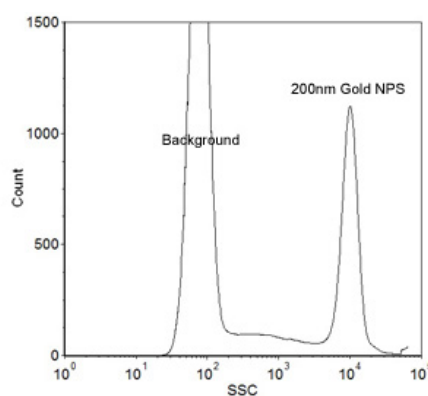
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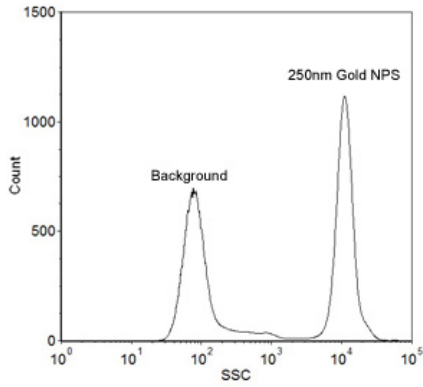
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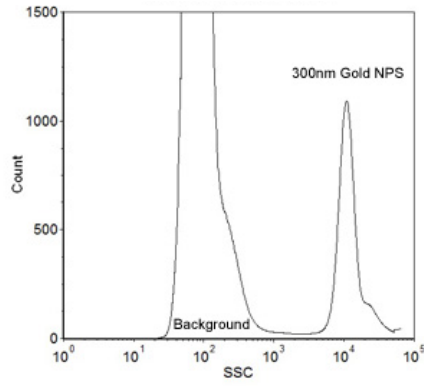
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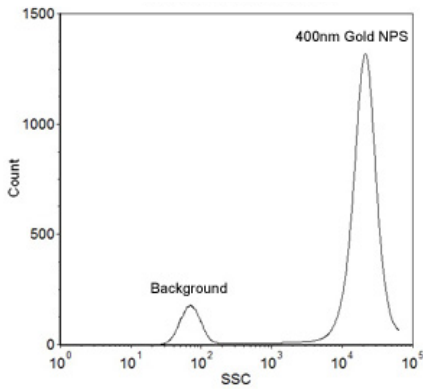
Cat. # GFC-200-1ML



Cat. # GFC-250-1ML



Cat. # GFC-300-1ML



Cat. # GFC-400-1ML