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## Product Information

**Gold Colloid, 5 nm (G1402)**  
**Gold Colloid, 10 nm (G1527)**  
**Gold Colloid, 20 nm (G1652)**

Storage Temperature 2-8 °C

### Product Description

Colloidal gold is a discrete, electron dense, non-fading, red colored marker useful as a probe in electron microscopy, light microscopy, and blotting procedures.<sup>1</sup> It requires no additional processing for detection, but in certain applications, the signal can be dramatically enhanced by reaction with silver (Silver Enhancer Kit, Product Code SE-100).

The gold colloid is characterized by its mean particle size and size variability. 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. Particles >15 nm are more suitable for scanning electron microscopy (SEM), light microscopy, and blotting. These gold colloid products are all monodisperse (the coefficient of variance of the particle size is less than 15% of the mean particle size). Monodisperse solutions are beneficial in electron microscopy, facilitating quantitation, and allowing for dual labeling with different particle sizes.

Colloidal gold can be complexed with a wide variety of biomolecules, generally proteins, by strong non-covalent interactions.<sup>2</sup> The proper concentration and pH must be determined for each individual ligand.<sup>3</sup> It is recommended that final stabilization of the solution be done with polyethylene glycol, albumin, or gelatin<sup>4</sup> after initial ligand adsorption. Then the solution must be processed to remove excess free ligand. This can be achieved by centrifugation<sup>3</sup> or by chromatography.<sup>5</sup> Finally, aggregates may be removed by centrifugation.<sup>3</sup> The resultant complex may be used in a diverse range of detection systems.<sup>1</sup>

All three gold colloid products are produced by a modified tannic acid/citrate method.<sup>6</sup>

All unconjugated gold colloids contain approximately 0.01% H<sub>2</sub>AuCl<sub>4</sub> suspended in 0.01% tannic acid with 0.04% trisodium citrate, 0.26 mM potassium carbonate, and 0.02% sodium azide as a preservative.

### 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 hazards and safe handling practices.

### Storage/Stability

It is recommended to store these products at 2-8 °C. **Do not freeze**, as freezing may cause aggregation of the colloid. These products contain 0.02% sodium azide as a preservative, and should be stable for extended periods, if stored refrigerated. Adsorption complexes may be supplemented with an antibacterial agent and stored in same manner.

### References

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