



# NNCrystal US Corporation

## Biotin Gold Nanoparticles

### Technical Data:

Core diameter: 5-100nm (Coefficient of Variance < 12%)

Polydispersity Index (PDI): <0.150

Amount: OD=50 (OD/mL = 1)

Absorption Peak: 515-570nm (Size Dependant)

Number of Biotin Groups on Surface:  $\sim 0.5/\text{nm}^2$

Solvent: USP Grade Purified H<sub>2</sub>O

Storage: Store at 4°C. Do not freeze.

Lifetime: If stored properly the nanoparticles are stable for at least 6 months.

### Specifications for each size:

| Diam. (nm) | Peak SPR (nm) | NPS/mL   | Wt. Conc (mg/mL) | Molar Ext (M-1cm-1) | Size Dispersity (+/-nm) | Particle Volume (nm <sup>3</sup> ) | Surface Area (nm <sup>2</sup> ) | Surface / Volume Ratio | Particle Mass (g) | Molar Mass (g/mol) | Molar Conc. |
|------------|---------------|----------|------------------|---------------------|-------------------------|------------------------------------|---------------------------------|------------------------|-------------------|--------------------|-------------|
| 5          | 515-520       | 5.47E+13 | 6.94E-02         | 1.10E+07            | <15%                    | 6.54E+01                           | 7.85E+01                        | 1.200                  | 1.27E-18          | 7.64E+05           | 9.08E-08    |
| 10         | 515-520       | 5.98E+12 | 6.07E-02         | 1.01E+08            | <15%                    | 5.24E+02                           | 3.14E+02                        | 0.600                  | 1.02E-17          | 6.11E+06           | 9.93E-09    |
| 15         | 520           | 1.64E+12 | 5.61E-02         | 3.67E+08            | <12%                    | 1.77E+03                           | 7.07E+02                        | 0.400                  | 3.43E-17          | 2.06E+07           | 2.72E-09    |
| 20         | 524           | 6.54E+11 | 5.31E-02         | 9.21E+08            | <12%                    | 4.19E+03                           | 1.26E+03                        | 0.300                  | 8.12E-17          | 4.89E+07           | 1.09E-09    |
| 30         | 526           | 1.79E+11 | 4.91E-02         | 3.36E+09            | <12%                    | 1.41E+04                           | 2.83E+03                        | 0.200                  | 2.74E-16          | 1.65E+08           | 2.98E-10    |
| 40         | 530           | 7.15E+10 | 4.65E-02         | 8.42E+09            | <12%                    | 3.35E+04                           | 5.03E+03                        | 0.150                  | 6.50E-16          | 3.91E+08           | 1.19E-10    |
| 50         | 535           | 3.51E+10 | 4.45E-02         | 1.72E+10            | <10%                    | 6.54E+04                           | 7.85E+03                        | 0.120                  | 1.27E-15          | 7.64E+08           | 5.83E-11    |
| 60         | 540           | 1.96E+10 | 4.30E-02         | 3.07E+10            | <10%                    | 1.13E+05                           | 1.13E+04                        | 0.100                  | 2.19E-15          | 1.32E+09           | 3.25E-11    |
| 70         | 548           | 1.20E+10 | 4.17E-02         | 5.03E+10            | <10%                    | 1.80E+05                           | 1.54E+04                        | 0.086                  | 3.48E-15          | 2.10E+09           | 1.99E-11    |
| 80         | 553           | 7.82E+09 | 4.06E-02         | 7.70E+10            | <10%                    | 2.68E+05                           | 2.01E+04                        | 0.075                  | 5.20E-15          | 3.13E+09           | 1.30E-11    |
| 90         | 564           | 5.37E+09 | 3.97E-02         | 1.12E+11            | <8%                     | 3.82E+05                           | 2.54E+04                        | 0.067                  | 7.40E-15          | 4.46E+09           | 8.92E-12    |
| 100        | 572           | 3.84E+09 | 3.89E-02         | 1.57E+11            | <8%                     | 5.24E+05                           | 3.14E+04                        | 0.060                  | 1.02E-14          | 6.11E+09           | 6.37E-12    |