

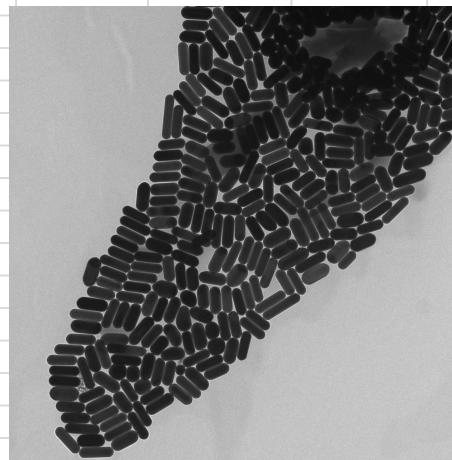
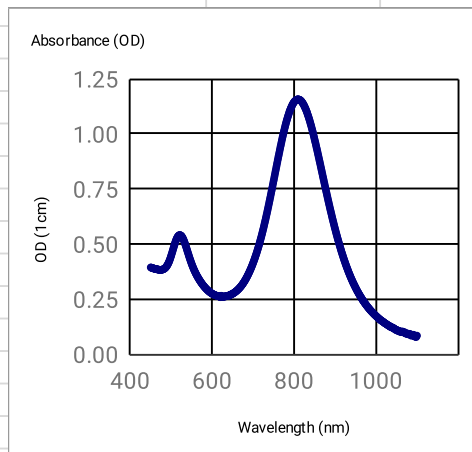
NANOPARTZ™

The gold nanoparticle for nanotechnology

Certificate of Analysis

| | | | | |
|----------------|--------------------------|----------|--------|-----------|
| Product Family | Nanopartz Gold Nanorods | | | |
| Product Number | A12-50-808-CTAB-DIH-1-25 | | | |
| Lot # | 12L491-12909 | | | |
| Form | Gold Colloid | | | |
| Capping Agent | CTAB | | | |
| Solution | 18MEG DI Water | | | |
| Source | 12H211 | | | |
| SPR Peak | nm | measured | UV/VIS | 812 |
| SPR Abs | OD | measured | UV/VIS | 1.2 |
| LSPR Peak | nm | measured | UV/VIS | 521 |
| LSPR Abs | OD | measured | UV/VIS | 0.6 |
| pH | | measured | Expt. | 7 |
| Zeta Potential | mV | measured | DLS | 35 |
| Diameter | nm | measured | DLS | 50 |
| Length | nm | measured | DLS | 150 |
| Aspect Ratio | | calc | | 3.0 |
| Concentration | nps/mL | calc | | 1.2E+10 |
| Wt. conc. | mg/mL | calc | | 0.060 |
| Concentration | ppm | calc | | 60 |
| Wt % | % | calc | | 0.0060% |
| Molarity | nM | calc | | 0.020 |
| Molar Ext. | M-1cm-1 | calc | | 6.1E+10 |
| CTAB | mM | measured | | 5 |
| Volume | mL | measured | | 25 |
| Date | | | | 9/15/2023 |
| Exp Date | | | | 3/13/2024 |

Alex Schoen, Manager Quality Control



12H211_500
 C01: 0.01239 nm/pix
 4:30:42 PM 11/9/2017

500 nm
 HV5500 G4V
 SILEX Map 45000x
 AMT Camera System