

## Ntherapy™

Nanopartz™ has developed and optimized Ntherapy™ nanorods specifically for use in biological, preclinical, and *in vivo* applications. Ntherapy™ nanorods are coated in a dense layer of hydrophilic polymers with amine, carboxyl, biotin, and neutravidin terminations. The polymers shields the gold surface and gives the particles long circulation times *in vivo*, while the varied terminations provide a multitude of attachment options. As opposed to other commercially available nanoparticles with short circulation times, such as quantum dots, Ntherapy™ nanorods have been rigorously tested *in vivo* to yield superior circulation times a variety of mammalian species. Ntherapy™ nanorods are available with transverse plasmon resonance peaks in the near-infrared and are easily conjugated to antibodies, oligos and other targets.



## Composition

The gold nanorods are shipped in PBS at pH=7.4.

## Custom Formulation and Production

10 nm axial sized nanorods are used for wavelengths 700 nm, 750 nm, 780 nm, 808 nm, and 850 nm since the 10 nm size offers the highest photothermal conversion per gram. Refer to application and technical notes.

## Quantity

This product is available in highly concentrated 1 ml sizes. For a 20g mouse, 0.150 ml per injection is required.

## Delivery

All orders come with a batch distribution curve for quality assurance. Standard sizes are in stock. Special order sizes will be shipped in two weeks or less. All shipments are sent Fed Ex Standard Overnight delivery. No shipments on Fridays.

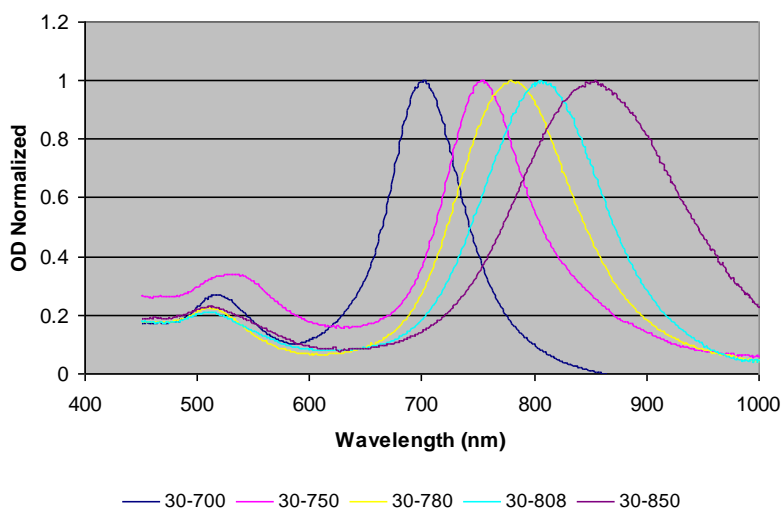
## Storage instructions

Store at 4°C and do not freeze. Before use, allow nanorods to warm to room temperature (refer to App Notes for *in vivo* use). If necessary, resuspend using sonication or vortexing.

## Conjugation

The conjugation chemistry for attaching the amine and carboxyl terminated polymers as well as biotin and neutravidin binding chemistries are well known. We also offer conjugation kits that

establish protocols for standard binding. Neutravidin is our replacement for streptavidin, offering better binding kinetics while reducing non-specific binding. See application notes for more information.



**Typical normalized UV-VIS for Ntherapy™ 30- series**

**Specifications**

|                         |   |
|-------------------------|---|
| In batch size variation | < 10% CV                                |
| Shape monodispersity    | >95% nanorods                           |
| Surface charge (zeta)   | +20 mV typ carboxyl<br>-20 mV typ amine |
| Axial size              | 10 nm                                   |
| Wavelength coverage     | 700-850 nm                              |
| pH                      | ~5                                      |

| Part #<br>Nanorod<br>(Axial<br>Diam/Peak<br>LSPR) | Axial<br>Diamete<br>r (nm) | Long<br>Size<br>(nm) | Peak<br>LSPR<br>Wave<br>(nm) | OD<br>LSPR<br>(AU) | Peak<br>SSPR<br>Wave<br>(nm) | OD<br>SSPR<br>(AU) | NPS/ml  | Wt.<br>conc<br>(µg/ml) | Wt. %   | PPM  | Molarity<br>(pM) | LSPR<br>Molar<br>Ext. (M-<br>1cm-1) | SSPR<br>Molar<br>Ext. (M-<br>1cm-1) | Peak<br>LSPR<br>accuracy<br>(nm) | LSPR<br>Linewidth<br>80%<br>(nm) |
|---|----------------------------|----------------------|------------------------------|--------------------|------------------------------|--------------------|---------|------------------------|---------|------|------------------|-------------------------------------|-------------------------------------|----------------------------------|----------------------------------|
| 30-PM-850   | 10                         | 45                   | 850                          | 50.0               | 512                          | 12.50              | 2.6E+13 | 1785.7                 | 0.1786% | 1786 | 43699            | 1.14E+09                            | 2.86E+08                            | +/-10                            | 100                              |
| 30-PM-808   | 10                         | 41                   | 808                          | 50.0               | 512                          | 12.50              | 2.9E+13 | 1805.6                 | 0.1806% | 1806 | 48943            | 1.02E+09                            | 2.55E+08                            | +/-10                            | 75                               |
| 30-PM-780   | 10                         | 38                   | 780                          | 50.0               | 512                          | 12.50              | 3.1E+13 | 1745.8                 | 0.1746% | 1746 | 50982            | 9.81E+08                            | 2.45E+08                            | +/-10                            | 65                               |
| 30-PM-750   | 10                         | 35                   | 750                          | 50.0               | 512                          | 12.50              | 3.2E+13 | 1670.7                 | 0.1671% | 1671 | 53199            | 9.40E+08                            | 2.35E+08                            | +/-10                            | 50                               |
| 30-PM-700   | 10                         | 29                   | 700                          | 50.0               | 512                          | 12.50              | 3.3E+13 | 1483.6                 | 0.1484% | 1484 | 55617            | 8.99E+08                            | 2.25E+08                            | +/-10                            | 40                               |

LSPR = Longitudinal SPR peak

SSPR = Axial SPR peak

Shape monodispersity (% rods) > 95%

Size variation +/-10% (both dimensions)

Aspect ratio variation = Peak LSPR accuracy/96

**Product Number**

|        | <i>Ntherapy™</i><br>Carboxyl Part # | <i>Ntherapy™</i><br>Amine Part # | <i>Ntherapy™</i><br>Biotin Part # | <i>Ntherapy™</i><br>Neutraavidin Part # |
|--------|-------------------------------------|----------------------------------|-----------------------------------|---|
| 700 nm | <a href="#">30-PC-700</a>           | <a href="#">30-PA-700</a>        | <a href="#">30-PB-700</a>         | <a href="#">30-PN-700</a>               |
| 750 nm | <a href="#">30-PC-750</a>           | <a href="#">30-PA-750</a>        | <a href="#">30-PB-750</a>         | <a href="#">30-PN-750</a>               |
| 780 nm | <a href="#">30-PC-780</a>           | <a href="#">30-PA-780</a>        | <a href="#">30-PB-780</a>         | <a href="#">30-PN-780</a>               |
| 808 nm | <a href="#">30-PC-808</a>           | <a href="#">30-PA-808</a>        | <a href="#">30-PB-808</a>         | <a href="#">30-PN-808</a>               |
| 850 nm | <a href="#">30-PC-850</a>           | <a href="#">30-PA-850</a>        | <a href="#">30-PB-850</a>         | <a href="#">30-PN-850</a>               |