



## dSiO<sub>2</sub> coated Upconverting Nanoparticles

### Introduction

New generation fluorophores, also termed upconversion nanoparticles (UCNPs), have the ability to convert near infrared radiations with lower energy into visible radiations with higher energy via a non-linear optical process, such as NIR to shorter NIR, visible (blue, green, red), or UV.

UCNPs exhibit unique luminescent properties, including high penetration depth into tissues, low background signals, large Stokes shifts, sharp emission bands, and high resistance to photo-bleaching, making UCNPs an attractive alternative source for overcoming current limitations in traditional fluorescent probes.

Abvigen provides a comprehensive list of upconverting nanoparticles (UCNPs) which are doped with lanthanide ions.

### Description

It can be dispersed in cyclohexane, chloroform and other non-polar organic solvents, poorly soluble in water, odorless.

Cat No	Sensitizer	Activator	Em	Ex
ABL-1-127	Ytterbium (Yb <sup>3+</sup> )	Thulium (Tm <sup>3+</sup> )	365/475 nm	975 nm
ABL-1-128	Ytterbium (Yb <sup>3+</sup> )	Erbium (Er <sup>3+</sup> )	545/660 nm	975 nm
ABL-1-129	Ytterbium (Yb <sup>3+</sup> )	Thulium (Tm <sup>3+</sup> )	804 nm	975 nm

**Diameter:** ~ 35 nm

**Crystal formula:** NaYREF<sub>4</sub>, RE: Yb, Er, Tm, Gd, Mu, Lu

**Coating:** Dense silica



**Concentration:** Please refer to the vial label for the specific concentration.

**Storage:** Store at 2-8 °C Do not freeze! Keep away from light.

### Applications

Immunoassay

Flow cytometry

Molecular recognition

Light-responsive drug release

Photosensitizers in photodynamic therapy

Highly sensitive bioimaging

Biosensors

### Advantage

Monodisperse

Excited at near-infrared range and emit at visible range

High quantum efficiency

Good stability

Variable surface modification for different biomedical application