

Citrate-modified Prussian Blue Nanoparticles, < 100 nm PRODUCT DATA SHEET

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Cat No: ABCPBN-100

Description

"Integrated diagnosis and treatment" is a development trend of disease diagnosis and treatment at present. Utilizing the unique properties exhibited by nanomaterials in physics, chemistry, biology, and other fields to construct a disease diagnosis and treatment system that integrates diagnosis and treatment based on nanomaterials is currently a research hotspot in the medical field.

Prussian blue nanoparticles have stable structure, unique optical, enzymatic, magnetic properties, and good biosecurity. In recent years, Prussian blue nanoparticles play an important role in the diagnosis and treatment of diseases in the fields of drug loading, Raman imaging, photoacoustic imaging, active oxygen removal, photothermal therapy, etc., and have received widespread attention from researchers.

Abvigen can provide high-quality citric acid modified prussian blue nanoparticles with good dispersion, stability, surface functionalization and low toxicity, which can be used for anti-oxidation, tumor magnetic resonance imaging, tumor photothermal treatment, etc., to build an integrated platform for disease diagnosis and treatment. The product has high repeatability between batches, which can meet the needs of different personalized materials such as research and development, testing and production of various customers.

For custom sizes, formulations or bulk quantities please contact our customer service department. Website: <u>www.abvigen.com</u> Phone: +1 929-202-3014 Email: <u>info@abvigenus.com</u>



Characteristics

Type: Citrate-modified Prussian Blue Nanoparticles Surface: Citrate Solvent: Ultrapure water Hydrodynamic dimension: 94 nm Zeta potential: -50 mV Concentration: 0.25 mg/mL Size: 10 mL Storage condition: Sealed storage at 4°C Shelf life: 6 months Package: Glass bottle

Hydrodynamic Dimensional Statistical Diagram



As can be seen from the above figure, the hydrodynamic size of the Prussian blue nanoparticles is about 94 nm.



TEM of Citrate-Modified Prussian Blue Nanoparticles



Ultraviolet-Visible Absorption Spectrum



It can be seen from the above figure that the Prussian blue nanoparticles have characteristic absorption at about 700 nm.

Advantages

Well-dispersed Structural stability Surface functionalization Low toxicity

Good biosafety

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Applications Antioxidant Drug carrier Tumor magnetic resonance imaging Tumor photothermal therapy

Use Effect

The results show that Prussian blue nanoparticles have multi-enzyme activities such as peroxidase, catalase and SOD, which can effectively remove free radicals.

The experimental results verified that PBNPs can protect cells from free radical damage caused by ultraviolet (UVA), diallyl trisulfide (DATS), lipopolysaccharide (LPS), phorbo ester (PMA), high sugar and other culture environments, and can protect neurohippocampal cells from damage during OGD reoxygenation. It is suggested that PBNPs is a potential ROS clearing, antioxidant, anti-inflammatory and protective agent for cerebral ischemia-reperfusion injury. An animal hepatitis model established with LPS demonstrated that PBNPs accumulates in the liver and spleen in mice and can effectively protect the liver from LPS-induced liver inflammation.

Prussian blue nanoparticles also have photothermal effects, which can be used in photothermal therapy and photoacoustic imaging. Magnetic resonance imaging can also be achieved by doping gadolinium; The characteristic Raman signal can be used for Raman imaging. It can also be used as a drug carrier to build a nanodrug delivery system.

Storage

Sealed, stored in a refrigerator at 4°C for 6 months.

Notes

1.Citrate-modified Prussian Blue Nanoparticles should avoid freezing and thawing during use and preservation.

2. Prussian Blue Nanoparticles are easy to decompose under alkaline conditions (pH > 7).



Ordering Information

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