
Creative Diagnostics Announces PEI PLGA Nanoparticles for Gene Delivery and Gene Therapy

2021-06-02

With years of experience in the pharmaceutical and life science sector, Creative Diagnostics introduces a series of PEI PLGA Nanoparticles for gene delivery and gene therapy, which are based on poly(lactide-co-glycolide) acid terminated with a lactide/glycolide ratio of 50/50 and a molecular weight of 32000 Da. These nanoparticles are positively charged due to the surface modification with PEI.

In recent years, non-viral gene delivery vehicles have attracted more and more attention, such as liposomes (lipoplexes), polycationic polymers (complexes), and organic or inorganic nanoparticles (nanocomposites). Poly(D,L-lactide-co-glycolide) (PLGA) was extensively assessed for the ability to deliver a variety of therapeutic agents. PLGA nanoparticles were shown to escape from the endo-lysosomal compartment to the cytoplasmic compartment and release their contents over extended periods of time. These features rendered PLGA nanoparticles as potential tools for gene delivery efficiently.

Polyethylenimine (PEI) is a cationic, water-soluble, linear, or branched polymer. Due to their high cationic charge density at physiological pH, PEIs are able to form non-covalent complexes with DNA, siRNA, and antisense oligodeoxynucleotide, which can be adsorbed onto negatively charged cell surface and translocated into cells via endocytic pathways. PEIs have been shown to be efficacious vectors in gene delivery; and based on their high surface charge, PEIs are promising candidates as non-viral vectors for delivery of negatively charged nucleic acids, for in-vitro and in-vivo applications.

Creative Diagnostics now provides biodegradable poly (D,L-lactide-co-glycolide) nanoparticles bearing polyethyleneimine on their surface, including DiagPoly™ PEI Poly(lactic-co-glycolic acid) [PLGA Nanoparticles](#), 0.1 µm, L/G=50/50(Cat No. DNQ-NV01), DiagPoly™ Fluorescent PEI Poly(lactic-co-glycolic acid) PLGA Nanoparticles, Green, 0.1 µm, L/G=50/50(Cat No. DNQ-NV09), and DiagPoly™ Fluorescent PEI Poly(lactic-co-glycolic acid) PLGA Nanoparticles, Red, 0.1 µm, L/G=50/50(Cat No. DNQ-NV11).

“These [nanoparticles](#) are available in different sizes, such as 100 nm or 200 nm, with high efficiency for gene transfection and gene delivery. And they’re amphiphilic as both hydrophilic and lipophilic compounds can be encapsulated. In addition, our PEI PLGA Nanoparticles with different MW of PLGA can also be customized upon request.” said Dr. Jessica Waldorf, chief scientific officer of R&D department, at Creative Diagnostics.

“Featured with biodegradability, biocompatibility and controlled release, our PEI PLGA Nanoparticles have optional fluorescence, including non- fluorescent, green fluorescent (EX/EM 498 nm/517 nm), and red fluorescent (EX/EM 525 nm/548 nm). Our comprehensive list of nanoparticles products are great tools for scientific uses in quality studies, and we’ll continue to provide the latest information and innovative methods and solutions to support global researchers.” said Alex, one of a senior scientific officers at Creative Diagnostics.

For more detailed information on PEI PLGA Nanoparticles or to discuss your project, please visit Creative Diagnostics at [CD Bioparticles](#).

Read the [original article](#) on GetNews.