

# Dendritic Nanogels

Drug delivery nanoparticles adaptable to all types of therapeutics

Dendritic Nanogels are designed to generate stable nanoparticles with tunable interior for encapsulation, transportation, and release of therapeutics agents.

DNG are biodegradable polymeric drug delivery systems that allows the formation of stable nanoparticles easily adaptable to therapeutic nature.

## Dendritic Nanogels (DNG) Technology

The DNG platform utilizes the self-assembly capacity of block copolymers based on polyethylene glycol (PEG) and hydrophobic bis-MPA components. The hydrophobic dendritic constituents contain allylic end-groups which further facilitates:

- a) self-assembly of the block copolymers
- b) core crosslinking to generate stable nanoparticles and
- c) allyl groups for post-functionalization

The resulting DNG can be customized with different cores, i.e., hydrophobic, anionic, or cationic depending on the properties of the therapeutic agent.

This results in a unique and versatile tool with the ability to control the release kinetics of a wide range of therapeutics.

## Key features of DNG

- Hydrophilic core made with FDA approved components.
- Easily dispersible nanoparticles.
- Adaptable core, possibility to adapt to cargo solubility.
- Presence of liable bonds to ensure degradability.
- Tunable size to allow different release rates.
- Patent protection.
- Control over particle size.
- Possibility to combine different systems to tune the release rate.
- High loading capacity (15-80%)

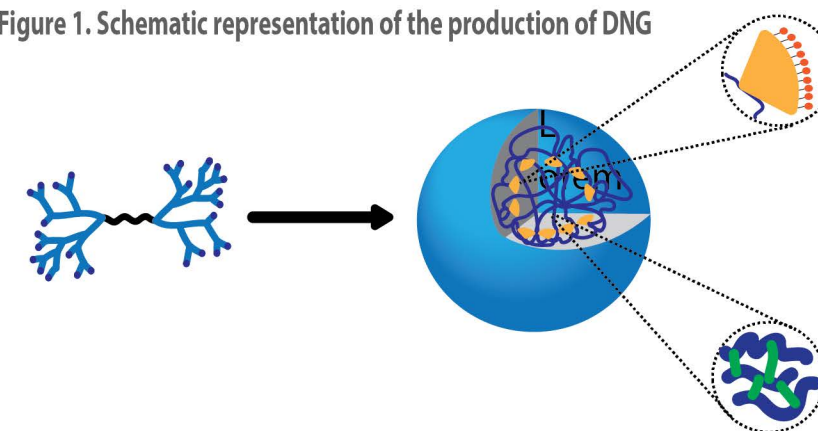
## Therapeutic compounds

- Peptides
- Antibiotics
- Chemotherapeutics

## Configuration

- Nanospheres
- Hydrogels
- Films
- Coatings

Figure 1. Schematic representation of the production of DNG



DNG are produced in aqueous conditions via thiol-Ene chemistry which provides control and reproducibility over the nanoparticle formation process resulting in particles with low polydispersity. The resulting DNG have a size range between 100-250 nm, the exact size of the nanoparticles will depend on the length of the hydrophilic core.