

## Preparation of Polymer Micellar Drug Carrier

As a drug carrier, micelles can reduce the degradation and loss of drugs, reduce toxic and side effects, increase drug bioavailability, and enable drugs to be effectively accumulated in specific parts of the human body. Polymeric micelles are thermodynamically stable colloidal solutions formed by the self-assembly of synthetic amphiphilic block copolymers in water. **CD**

**Formulation** provides services such as customization of polymeric micelles, EPR effect hydrophilic shell design, and mass production to help customers in drug development.

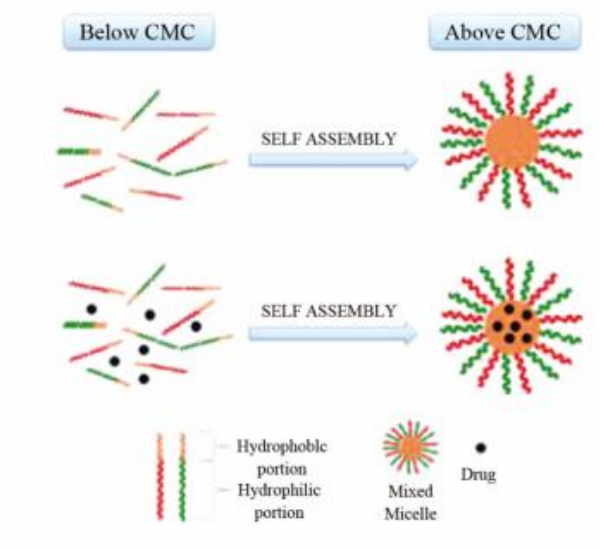


Fig. 1 Self-assembly of Polymer Micelles

## Polymer Micellar Services

As a supplier of pharmaceutical formulations, **CD Formulation** can provide polymer micelles services. Specific services include the following:

## **Custom Polymer Micelles Services**

The polymer micelles we can customize include block polymer micelles, graft copolymer micelles, polyelectrolyte micelles, and non-covalent bond micelles, *etc.*, and can be customized according to customer requirements in spherical, cylindrical, helical and layered and other different structures, different forms of polymer micelles. In the process, physical methods such as dialysis can be used to enter the hydrophobic inner core of the micelle, and then enter the inner core of the micelle through coordination, compound binding, electrostatic interaction, *etc.*, to form drug-loaded micelles.

## **EPR Effect Hydrophilic Shell Design**

Polymer drug-loaded micelles with smaller particle size can be designed to achieve passive targeting to tumor sites through the EPR effect, while active targeting and stimuli-responsive polymer micelles can improve drug bioavailability and reduce drug toxic side effect.

## **Mass Production**

We have a professional R&D center that can serve you flexibly according to your schedule. In addition, we can also manufacture in large quantities according to your needs.

# **Application of Polymer Micelles as Drug Carriers**

## **Compatibilization of Drugs**

The development of biocompatible and biodegradable drug carriers with small particle size, high load capacity, long cycle time and the ability to accumulate at pathological sites *in vivo* is particularly important for the delivery of insoluble drugs.

## **As a Sustained-release Carrier for Drugs**

Polymer micelle by physical package, electrostatic interactions, as well as the combination of chemical methods such as limit drugs firmly in the hydrophobic core, low CMC polymer micelle has a longer cycle time in the blood, wrapped up by the degradation of copolymer micelles of drug carrier or copolymer of microporous release method such as efficacy, greatly extended the drug effect time, The bioavailability of the drug was improved.

## **Our Advantages**

Advantages of polymeric micelles compared to other drug carriers:

Only the inner hydrophobic area of the micelle is absent, and the inner water-containing area is absent.

The particle size is smaller than that of liposomes and microparticles.

The outer surface segments are protective.

## Services Flow



Source: <https://www.formulationbio.com/preparation-of-polymer-micellar-drug-carrier-services.html>