

## Make Phospholipid Complex

The combination of drugs and phospholipids to form drug phospholipid complexes can significantly change the solubility and other physical and chemical properties of drugs, thereby promoting drug absorption, enhancing drug pharmacological effects and curative effects, prolonging drug action time, and reducing drug side effects. Insoluble drugs form complexes with phospholipids, which can significantly enhance the lipid solubility of drugs. Although the solubility of drugs in water does not increase, due to the high affinity of phospholipids to cell membranes, it can promote the binding of drug molecules to cell membranes, promote absorption, and improve oral bioavailability of drugs.

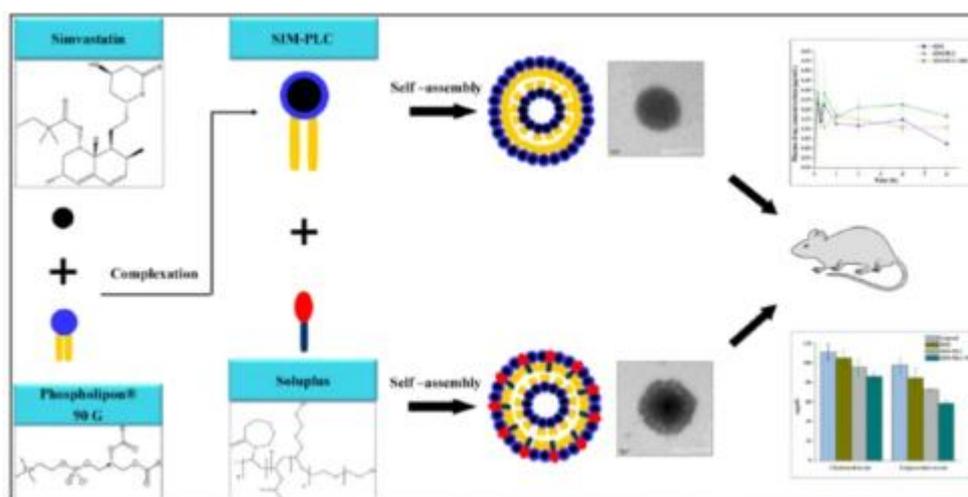


Fig.1

Combination of phospholipid complex and matrix dispersion(Chakravarti, 2021)

## Our Services

As a supplier of pharmaceutical preparations, CD Formulation also provides various preparation-related services. There are many ways to increase drug solubility and improve bioavailability, including physical and chemical methods. We provide customers with phospholipid complex services. After the drug can be combined with phospholipid to form a phospholipid complex, its solubility can be changed and the bioavailability can be improved. The services currently offered include the following customizations:

- Phospholipid Complexes of Hydrophobic Drugs
- Phospholipid Complexes of Lipid-insoluble Drugs
- Phospholipid Complexes of Water-insoluble and Lipid-insoluble Drugs
- Phospholipid Complexes of Biomacromolecules
- Metal Ion Phospholipid Complex
- Phospholipid Complex of Natural Active Ingredients

In addition, drug and phospholipid molecules are connected by intermolecular forces such as charge transfer, hydrogen bonding or van der Waals force to form drug phospholipid complexes, so the structure of phospholipid complexes can be determined by ultraviolet spectroscopy, infrared spectroscopy, scanning electron microscopy, thermal analysis, various analytical methods such as X-ray and nuclear magnetic resonance can be used for identification.

## **The Function of Phospholipid Complexes**

### **Promote Biofilm Absorption**

Phospholipids are important components of biological membranes, and the preparation of drugs and phospholipids into complexes can improve the lipid solubility and biomembrane permeability of drugs.

### **Improve Drug Bioavailability**

After the free drug interacts with phospholipids to form a complex, the drug has the advantage of phospholipid, which can improve the drug's absorption in the gastrointestinal tract or percutaneous, thereby increasing the blood drug concentration; on the other hand, phospholipid can play a protective role on the drug, reduce the scavenging effect, so the bioavailability of the drug is significantly improved.

### **Prolong Drug Action Time**

The phospholipid complex uses a large amount of phospholipids as the drug matrix, which delays the release of the drug and prolongs the action time.

### **Skin Penetration**

As the main component of biological membrane, phospholipids can easily penetrate the skin. Therefore, after the drug and phospholipids are prepared to form a complex, the lipid solubility of phospholipids can easily penetrate the epidermis barrier and enter the dermis, and then disintegrate to release the drug to exert its curative effect.

### **Reduce Toxic Side Effects**

Phospholipids are naturally derived lipids with good biocompatibility. In the drug-phospholipid complex, macroscopically, phospholipids encapsulate the drug to reduce drug toxicity; under the microscope, phospholipid molecules and drug toxic groups or long aliphatic chains in phospholipid molecules encapsulate the toxic groups, thereby reducing adverse reactions happened.

## **The Advantages of Our Services**



Source: <https://www.formulationbio.com/make-phospholipid-complex-services.html>