

Precipitation of hydrophobic drugs as nanocrystals for IV administration of anti-cancer drugs

Value Proposition

Drug development is a key driver for research-based pharmaceutical companies. Two classes of drugs, BCS Class II and IV, are drugs that have bioavailability and/or delivery problems, due to their low-solubility. Innovations in high-throughput screening has meant that more and more drugs fall into these two categories. About 40% of drugs currently under development and 60% of drugs coming directly from synthesis or high throughput screening are classified as poorly soluble. Consequently, technology is needed to increase bioavailability and facilitate drug delivery.

Nanocrystal formation has transformed how many of these low-soluble drugs may be administered, allowing them to be used intravenously where they will be most effective. However, nanocrystals still suffer some complications with over-crystallization making the drugs unable to be used intravenously.

Technology

This invention inhibits the massive crystallization for a low-solubility drug. The nanocrystals are stabilized when they are made in order to prevent massive crystallation. When the stabilizer is added, previous suspensions of nanocrystals that formed visible crystals maintain their nanocrystal structure, and the solution remains clear to the naked eye. This invention is applicable to drugs with low-solubility, and can make drugs that previously suffered from bioavailability and drug delivery problems useful and applicable to the market.

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