

Nanoemulsions, as submicron-sized colloidal dispersions, have garnered significant attention in pharmaceutical applications due to their unique properties, including high surface area, kinetic stability, and the ability to solubilize hydrophobic drugs. Enhanced permeability and retention (EPR) effect allows nanoemulsions to accumulate in tumor tissues, improving the therapeutic index of anticancer agents. Additionally, the controlled and sustained release of drugs from nanoemulsions ensures prolonged therapeutic effects and reduces dosing frequency, enhancing patient compliance.

****Pulmonary Delivery**:** Inhalable nanoemulsions can deliver drugs directly to the lungs, making them suitable for treating respiratory diseases like asthma and chronic obstructive pulmonary disease (COPD).

Bioavailability Enhancement Nanoemulsions significantly enhance the bioavailability of drugs by improving their solubility and stability in the gastrointestinal tract.

****Oral Delivery**:** Nanoemulsions improve the solubility and stability of poorly water-soluble drugs, enhancing their oral bioavailability. They enhance the skin permeation of active ingredients, making them suitable for treating skin conditions like acne, psoriasis, and fungal infections.

****Parenteral Delivery**:** Nanoemulsions can be used for intravenous administration, ensuring the rapid onset of action and precise drug targeting.

Conclusion Nanoemulsions represent a promising strategy in pharmaceutical applications, offering solutions to solubility, stability, and bioavailability challenges of many drugs. This review highlights their pharmaceutical applications, focusing on drug delivery, bioavailability enhancement, and therapeutic efficacy.

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