

A Review on Nano Emulsion: Characteristics, Formulation and Types

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Abstract: *In pharmaceutical formulations, nanoemulsions are practical in the nanometer range. They have the ability to encapsulate drugs that are poorly soluble in water due to their hydrophobic nature and also consist of safe gradient excipients, making them safer and more stable for drug delivery. The treatment of cancer has been a problem for several decades, because the drugs developed to treat this disease have not always succeeded or even failed, mainly due to low solubility and non-specific toxicity. This problem can be solved with a nanoemulsion, because it not only solves the water solubility problems, but also provides a specific target for cancer cells. This chapter provides an overview of nanoemulsions and various approaches to prepare nanoemulsions, which include high energy approaches such as microfluidizer high pressure valve homogenization, ultrasonic homogenization. For low-energy approaches, the phase inversion composition, phase inversion temperature, and emulsion inversion point for spontaneous emulsification are discussed in detail*

Keywords: nanoemulsion, production approaches, applications