

## Micellar Solubilization in the formulation development of poorly soluble Naproxen

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In the present research work, micellar solubilization technology has been employed for the formulation development of poorly soluble Naproxen and evaluation was done basing upon the dissolution study. Naproxen, an arylacetic acid group of non-steroidal anti-inflammatory drugs (NSAIDs) has analgesic and antipyretic properties used for the treatment of rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, tendinitis, bursitis, and acute gout. Micellar solubilization technology has been employed for increasing the solubility of the poorly soluble NSAID. Cloud Point Temperature (CPT) of the nonionic surfactants has been used as the basis for the solubility study because there is better entrapment of the drug into the surfactant micelle at this temperature. The results of dissolution study of spray dried formulation reveal the pH independent solubility enhancement of Naproxen. The characterization study with particle size and size distribution, scanning electron microscopy, fourier transform infrared spectroscopy, differential scanning calorimetry and X-ray powder diffractometry also reflect the compatibility of the drug with the excipients and the morphological characteristics of the drug and spray dried powder. Thus, the micellar solubilization at CPT has been identified as one of the most efficient method of solubility enhancement, consequently spray drying of micellar solution to improve wettability, solubility and hence the dissolution behaviour of poorly soluble drugs.

### Biography

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## Role of free radicals in degenerative diseases

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Evidence is accumulating that most of the degenerative diseases that afflict humanity have their origin in deleterious free radical reactions. These include atherosclerosis, cancer, inflammatory joint disease, asthma, diabetes, senile dementia and degenerative eye disease. The process of biological ageing might also have a free radical basis. Most free radical damage to cells involves oxygen free radicals or, more generally, activated oxygen species (AOS) which include non radical species such as singlet oxygen and hydrogen peroxide as well as free radicals. The AOS can damage genetic material, cause lipid per oxidation in cell membranes and inactivate membrane-bound enzymes. Human are well endowed with antioxidant defenses against AOS: these antioxidants or, free radicals scavengers, include ascorbic acid (Vitamin C), alpha tocopherol (Vitamin E), beta-carotene, coenzyme Q 10, enzymes such as catalase and superoxide dismutase, and trace elements including selenium and zinc. The eye is an organ with intense AOS activity, and it requires high levels of antioxidants to protect its unsaturated fatty acids. The human species is not genetically adapted to survive past middle age, and it appears that antioxidant supplementation of our diet is needed to ensure a more healthy elderly population.