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Novel drug delivery in herbal medicines

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Herbal medicines have widely been used all over the world since time immemorial. In recent years, there was unprecedented development in herbal medicines as they gain popularity in the developed world. Recently there was a greater global interest in non-synthetic, natural drugs derived from plant/herbal sources due to better tolerance and minimum adverse drug reactions. Plants have been used in a wide variety of dosage form. Traditional dosage form includes pill, powder, semi fluid extract, tincture, decoction, medicated tea, solutions and many other traditional/alternative systems of medicine dosage forms. In past, novel drug delivery approaches were not applied to herbal medicines owing to lack of scientific validation and processing difficulties, such as adulteration, standardization, extraction, purification and identification of marker compounds in complex poly-herbal dosage form. In present scenario due to advancement in interdisciplinary sciences and novel strategy in isolation, purification and identification techniques, a variety of novel herbal formulations like polymeric herbal nano-carriers, phytosomes, herbosomes, pro-niosomes, nanoemulsions, microsphere, transferosomes, implants and ethosomes has been reported using bioactive plant extracts/phytoconstituents. These novel formulations were found to have remarkable advantages over conventional formulations of plant origin such as enhancement of solubility, bioavailability, reduced toxicity, improved pharmacological activity, better stability, sustained delivery, and protection from physical and chemical degradation. Recently, many formulations based on novel drug delivery system are produced by patented/non-patented technology from various herbal drugs/phytoconstituents such as curcumin, quercetin, silybin, bilobalide, marsupsin, andrographolide, coumestans, metrine, embelin, brucine, rutin, apigenin, luteolin and many more. Hence novel drug delivery in herbal medicines has become a tool to improve herbal medicine pharmacokinetic and pharmacodynamic profile in order to improve its safety and efficacy.

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