

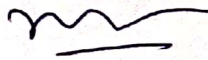
Synopsis for PhD application

**TITLE: PHARMACEUTICAL APPROACHES ON NOVEL PHYTO
DRUGS FOR THE TREATMENT OF HUMAN AILMENTS**

Phytoconstituents are potent compounds having multifaceted therapeutic activity. However, their availability as dosage forms is restricted to mankind owing to physicochemical properties such as solubility issues, chemical instability, enzymatic degradation, cell membrane impermeability that retard their bioavailability. Pharmaceutical drug carriers such as liposomes, niosomes and nanoparticles offer the advantages of delivering drugs at required rate and extent for the treatment of diseases at the required site. Moreover, these devices have already been commercially established successfully ensuring chemical stability of drugs along with site-specific delivery.

The present research work aims at developing suitable pharmaceutical devices for novel phyto drugs that can be used characteristically for specific diseases. Some of these plant based drugs include quercetin, ellagic acid, mangiferin and naringin which have been investigated for their anti-inflammatory, anti-oxidant, analgesic, hepatoprotective, anti-diabetic, hypolipidemic activities. Pharmaceutical approaches such as different types of nanoparticles will be formulated to be used as formulations of phyto drugs with specific pharmacological activity. The phytoconstituents will be loaded into such nanocarriers with the aid of polymers.


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The prepared formulations will be characterized for the physicochemical property that can be modulated in devising a suitable pharmaceutical dosage form. The drug loading and subsequent release at specific sites of the prepared formulations will be carried out to establish its availability in the required amounts at desired rate. Various cellulosic membranes can be used as a medium to evaluate the membrane permeability of the formulations. The surface morphology and size distribution analysis will also be carried out to characterize the prepared formulations.

The bioavailability of the phyto formulations will be finally established by the evaluation of their pharmacological activities in various experimental animals. The successful formulation and evaluation of phyto pharmaceuticals can thus benefit the field of phytotherapy in the treatment of human ailments.

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