Pharmaceutical Technology
Perspectives

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Table of Content

1. Small Active Molecules with Insulin Mimetic Activity
   Muhammad Taher
   12

2. Liver and Kidney Protective Effects of the Polyphenols, Tocopherols and Carotenoids
   Juliana bt Md. Jaffri
   25

3. Potential Surface Active Properties of Nigella sativa
   Siti Nurfaajariah bt Said and Kausar bt Ahmad
   37

4. Pufa in Fish: Extraction and Fractionation Methods
   Sahena Ferdosih and Md. Zaidul Islam Sarker
   51

5. Polypyrrole-Peg Composite Film for Drug Delivery
   Khadijah bt Edweng
   64

6. Co-Encapsulation of Cyclophosphamide and Mesna into Double-Walled Microspheres
   Farahidah bt Mohamed and Christopher van der Walde
   77

7. A Recent Updates of Polysaccharide Based Nanoparticulate Oral Preparation of Insulin with Special Emphasis on In Vivo Application
   Uttam Kumar Mandal
   97

8. Development of an Appropriate and Robust Dissolution Method for Solid Dosage Forms
   Uttam Kumar Mandal
   116

9. Use of Cyclodextrin in the Production of Biomedical Nano Particles
   Omar El-Hadad
   126

10. The Role of Pharmacogenetic Variation in Metoprolol CYP2D6 Genotypes Polymorphism
    Wan Mohd Azizi Wan Sulaiman, Tariq Abdul Razak, Lay Kek Teh and Rusli Ismail
    133

11. Polymorphic Crystals and Their Characterisation
    Mohd Rashid Abu Bakar, Zoltan Kalman Nagy and Christopher David Rielly
    163
CHAPTER 3

POTENTIAL SURFACE ACTIVE PROPERTIES OF NIGELLA SATIVA

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The potential surface active properties of Nigella sativa may arise from numerous fatty acids that can be isolated from the extract of black seeds. The extract of black seeds mostly comprises of fixed oils (fatty acids) and volatile oils. The major fatty acids in black seeds are linoleic acid, followed by oleic and palmitic acids; the percentage compositions are described. The major volatile oils are thymoquinone and nigellone. The potential surface active properties of Nigella sativa can be exploited for emulsification.

3.1 Surfactants

Surfactant is an agent that is used to reduce the interfacial tension between two immiscible liquids as simple as water and oil. Presence of surfactants in products used daily enable us to clean dirty clothes, writing on a paper using a pen and having various kinds of pharmaceuticals or cosmetics. A surfactant has certain and specific properties that make it useful as emulsifier, dispersant, wetting or foaming agent. In the pharmaceutical field, surfactant is added in the drug formulation to enhance drug delivery and stabilize the drugs with specific function in emulsions. It has important roles in increasing solubility of the drugs, enhancing the release of drugs and transport, minimizing toxicity, slowing degradation and thus enhancing the effectiveness of the drugs.