

## Role of drug regulatory agency of Pakistan, pharmaceutical industries and their compliance

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Pakistan is a small country as compared to India and China; however it has substantial share in pharmaceutical market of Asia. Pakistan is a strategically very important and big hub for import and export of basic and finished pharmaceutical products, biologicals, herbal and homeopathic medicines, pharmaceutical equipments etc. In Pakistan, there are small as well as large pharmaceutical units and they are following guidelines of European Medicines Agency (EMA), US Food and Drug Administration (US-FDA) and International Conference on Harmonisation (ICH). Industry quality compliance ratio has improved over the years, and we are producing high quality finished pharmaceutical products. There are six hundred ten pharmaceutical units in Pakistan; these units are under the control of Drug regulatory Agency (National Regulation and Services Division). Employee of regulatory bodies are getting training from US-FDA, EMA, and ICH etc. and improving current Good Manufacturing Practice. We have a great potential in herbal medicines and we have explored the world best markets due to high quality. There are different research institutes which are collaborating with industries and helping in conducting basic and clinical studies. The number of local and multinational units in Pakistan has greatly increased in last 10 years, which are offering variety of pharmaceutical products and due to competition the price of finished products are low and affordable for most of the people of Pakistan. However, still much have to be achieved in order to reach the American and European pharmaceutical standard.

### Biography

Jibran Khan has completed his undergraduate studies in Faculty of Pharmacy, Sindh University, Jamshoro, Pakistan in 2004 and postgraduate studies in Department of Pharmacology, Faculty of Pharmacy, University of Karachi, Pakistan in 2007. He has got few years of experience of working in regulatory compliance department of pharmaceutical industries. His research interest includes preclinical studies using in vivo animal seizure models. He is also involved in clinical studies on the effects of new antiepileptic drugs in epileptic patients.

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## Development of supersaturatable self-emulsifying drug delivery system for improving the oral bioavailability of poorly soluble drugs: A comprehensive study

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The present literature survey derives an important aspect of supersaturatable self-emulsifying drug delivery system (S-SEDDS), a new thermodynamically stable formulation approach wherein it is designed to contain a comparatively reduced amount of surfactants like Cremophor RH40, Labrasol, Labrafil M and a water-soluble cellulosic polymer like HPMC used to prevent precipitation of the drug by generating and maintaining a supersaturated state *in vivo*\*. The S-SEDDS can result in enhanced oral bioavailability as compared with the related self-emulsifying drug delivery systems (SEDDS) because the mean droplet size of the optimized S-SEDDS\* was smaller than the related SEDDS upon dilution, largely because of the presence of the 5%w/w of HPMC. Due to reduced surfactant levels in S-SEDDS may produce minimal gastrointestinal side effect due to surfactants. Paclitaxel, Carbamazepine and Silybin have been studied\* as model drug in this study and prepared supersaturatable self-emulsifying drug delivery system by constructing pseudo-ternary phase system. S-SEDDS have been studied to evaluate droplet size and zeta potential. Stability study suggested that S-SEDDS is more stable than SEDDS.

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