**Emulsion forming drug delivery systems as improved way of oral delivery of drugs**

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## Abstract

Oral bioavailability is important parameter during develop the new drugs. About 40% of new drug compounds exhibit low solubility in water, which means low oral bioavailability, associated with Biopharmaceutical Classification System class II (BCS) drugs. In recent years, much attention has been focused on emulsion forming drug delivery systems such as: self-emulsifying (SEEDS), self-microemulsifying (SMEDDS) and self-nanoemulsifying drug delivery system (SNEDDS) to improve these inconveniences. Discussed systems are isotropic mixtures consist of oils, surfactants and co-surfactants/co-solvents, which emulsify under conditions of gentle agitation, when come in contact with gastro-intestinal fluid. SEDDS form surfactants of HLB<12 and SMEDDS, SNEDDS are using surfactants of HLB>12. SEDDS has droplet size in the ranges from 200 nm to 5 μm, SMEDDS – less than 200 nm and SNEDDS in the ranges from less than 100 nm. They are thermodynamically stable systems. Hydrolyzed vegetable oils are widely used as oil components. Sorbitan monooleate (Span 80) is often used as a surfactant. Co-surfactants are preferably short and medium-chain alcohols such as octanol, which are known to formulate the spontaneous self-emulsifying formulation. Glycols are used a co-solvents, e.g. propylene glycol. These systems can be dispensed in a soft or hard gelatin, capsule, tablets and pellets. All descripted drug delivery systems can be characterized by ternary/pseudo ternary phase diagram, droplet size or zeta potential. Emulsion forming drug delivery systems are promising approach to be used as effective drug delivery vehicles for wide range of drugs. They improve oral bioavailability, are easy to prepare and reduce the drug dose.

## Biography

Aleksandra Glowka has completed her MSc from Adam Mickiewicz University in Poznan and started PhD studies at the same University. She works as a researcher in the Laboratory of Applied Chemistry. She has published 3 papers in post-conference materials.

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