

Drug delivery systems: Systematic analysis of physicochemical, pharmacokinetic and therapeutic properties

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Drug vectors opened new opportunities in drug delivery offering an advance in therapeutics against many diseases, including cancer. However, the systematic design of delivery systems still is underexplored. Here we analyzed drug delivery systems clinics and trials together with drugs in DrugBank by their physicochemical and pharmacokinetic properties, and ATC classification. Therapeutic action of drugs, compatibility and release from vectors, as well as the following pharmacokinetics, were shown to depend on LogP. Strong correlation between prolonged half-life by nanovectors and hydrophobicity of drugs was found. We determined the overall potential of drug delivery systems in the present market. These results not only summarize the scope of nanotherapeutics, but also draw trends for their optimized development.

Biography

Povilas Norvaisas holds a B.Sc. in Biophysics with research focus on drugs and drug delivery systems. He is the first author of 2 peer-reviewed papers and a recipient of several national and international scholarships. Arturas Ziemys has Ph.D. in biomedical sciences and molecular biophysics. The focus of his research is on drug transport models for drug delivery vectors. He is co-author of 25 peer-reviewed papers and holds some professional awards.