food sensory analysis to assess the quality of a given product. We review instrumental advances and couplings, automation in sample preparation, data elaboration, and a selection of applications.

Dahan, A. et al. (2016). "The solubility-permeability interplay and oral drug formulation design: Two heads are better than one." *Adv Drug Deliv Rev* 101:99–107.

Poor aqueous solubility is a major challenge in today's biopharmaceutics. While solubility-enabling formulations can significantly increase the apparent solubility of the drug, the concomitant effect on the drug's apparent permeability has been largely overlooked. The mathematical equation to describe the membrane permeability of a drug comprises the membrane/aqueous partition coefficient, which in turn is dependent on the drug's apparent solubility in the GI milieu, suggesting that the solubility and the permeability are closely related, exhibit a certain interplay between them, and treating the one irrespectively of the other may be insufficient. In this article, an overview of this solubility–permeability interplay is provided, and the available data is analyzed in the context of the effort to maximize the overall drug exposure. Overall, depending on the type of solubility–permeability interplay, the permeability may decrease, remain unchanged, and even increase, in a way that may critically affect the formulation capability to improve the overall absorption. Therefore, an intelligent design of solubility-enabling formulation needs to consider both the solubility afforded by the formulation and the permeability in the new luminal environment resulting from the formulation.

Dapson, R. W. (2013). "Alternative methods for estimating common descriptors for QSAR studies of dyes and fluorescent probes using molecular modeling software: 1. Concepts and procedures." *Biotech Histochem* 88(8):477–488.

Quantitative structure–activity relation (QSAR) models were developed to predict uptake and intracellular localization of probes or dyes in living cells. Many of the QSAR parameters used in such models are determined manually. Unfortunately, this requires a depth of chemical knowledge that biologists who wish to use these predictive tools do not necessarily possess. Moreover, some of the parameters are not easily obtained for all dyes and probes, which further restricts widespread use of QSAR methodology. Alternatives to some of these QSAR descriptors are defined and explained here. Estimation of these novel parameters using molecular modeling software, widely available and readily usable on personal computers in a variety of forms and brands, is described here. QSAR researchers need only draw the molecular structure and, with the proper commands, obtain either the parameters directly or the information to calculate them. I also demonstrate how the same software can generate some of the standard QSAR parameters, e.g., MW, Z, CBN, more reliably and conveniently than the manual procedures. A particularly problematic descriptor is log *P*, the logarithm of the octanol/water partition coefficient of a probe. This is discussed in detail and a novel alternative measure, the hydrophilic/lipophilic index (HLI), is introduced together with preliminary validation.

DiDomenico, C. D. and L. J. Bonassar (2018). "How can 50 years of solute transport data in articular cartilage inform the design of arthritis therapeutics?" *Osteoarthritis Cartilage*.

OBJECTIVE: For the last half century, transport of nutrients and therapeutics in articular cartilage has been studied with various in vitro systems that attempt to model