showed that active targeting improves the effectiveness of the nanodrugs alone, while lowering its side effects. The main focus has been on hepatocarcinomas, mainly by exploring glycans as homing molecules. Other ligands such as peptides/small proteins and antibodies/antibody fragments, with affinity to either tumor vasculature or tumor cells, have also been widely and successfully applied to guide nanodrugs to GI carcinomas. Conversely, few solutions have been presented for pancreatic tumors. To this date only three nanocomplexes have progressed beyond preclinical stages: (i) PK2, a galactosamine-functionalized polymeric-DOX formulation for hepatocarcinomas; (ii) MCC-465, an anti-(myosin heavy chain a) immunoliposome for advanced stage metastatic solid tumors; and (iii) MBP-426, a transferrin-liposome-oxaliplatin conjugate, also for advanced stage tumors. Still, none has been approved for clinical use. However, based on the high amount of preclinical studies showing enthusiastic results, the number of clinical trials is expected to increase in the near future. A more profound understanding about the molecular nature of chemoresistant clones and cancer stem cell biology will also contribute to boost the field of guided nanopharmacology towards more effective solutions.

Figueroa, C. et al. (2009). "Pharmacokinetic profiles of extended release quetiapine fumarate compared with quetiapine immediate release." *Prog Neuropsychopharmacol Biol Psychiatry* 33(2):199–204.

This 10-day, single-center, open-label, randomized, crossover study compared pharmacokinetic profiles, and tolerability of extended release quetiapine fumarate (quetiapine XR) with quetiapine immediate release (quetiapine IR) in patients with schizophrenia, schizoaffective disorder or bipolar disorder. After a 2-day lead-in period during which patients received quetiapine XR 300 mg once daily, patients were randomized to quetiapine IR 150 mg twice daily followed by quetiapine XR 300 mg once daily, or quetiapine XR 300 mg once daily followed by quetiapine IR 150 mg twice daily. Pharmacokinetic parameters were evaluated at the end of each 4-day treatment period at steady state. Vital signs, laboratory values, and adverse events (AEs) were recorded throughout the study. The least squares mean (90% confidence interval) of the ratio of the area under the plasma concentration–time curve over a 24 hours dosing interval (AUC ([0–24 hours])) for quetiapine XR/IR was 1.04 (0.92–1.19) and within the predefined range set for equivalence (0.80–1.25). Maximum plasma concentration at steady state (C(max)) was approximately 13% lower for quetiapine XR than for quetiapine IR (495.3 vs. 568.1 ng/mL), time to reach C(max) (t(max)) was 5 hours versus 2 hours and mean concentration at the end of 24 hours dosing interval (C(min)) was 95.3 versus 96.5 ng/mL, respectively. No patients withdrew from the study owing to AEs and there were no serious AEs or deaths related to study medication. No unexpected AEs, changes in vital signs or laboratory values were observed. These findings suggest that modifying the formulation does not change the overall absorption or elimination of quetiapine, and support emerging clinical evidence for the use of quetiapine XR as a once daily treatment in patients initiating therapy or those established on quetiapine IR.

Fitzgerald, K. A. et al. (2015). "Life in 3D is never flat: 3D models to optimize drug delivery." *J Control Release* 215:39–54.

The development of safe, effective and patient-acceptable drug products is an expensive and lengthy process and the risk of failure at different stages of the development