Repurposing and IP strategies in pharma and biotech sectors

Sripathi Rao Kulkarni
CSIR-Central Drug Research Institute, India

Researchers have earned accolades for proving or disproving what were once considered mysteries of science. Historically, 'trial and error' had a purpose of being applied or demonstrated for the benefit of the society. Innovations relating to the pharmaceutical and biotechnology sectors normally see the churning out of ideas, reduction to practice and ultimately commercialization. Michael J. Barratt and Donald E. Frail have discussed the possibilities of drug repurposing extensively in 'Drug Repositioning: Bringing New Life To Shelved Assets and Existing Drugs' wherein they outline the practices and procedures adopted for drugs that were shelved or not in use for some time. This study attempts to understand the several strategies, as well as administrative and legal constraints involved in infusing new life into existing/shelved molecules in addition to the existing practices. For the purposes of the study, the New Drug Applications (NDAs) and Therapeutic Biologic Applications (BLAs) approved by the United States Food and Drug Administration (USFDA) from 2004 to 2013 were considered, taking into account various aspects such as chemical entities, disease condition/application, type of application, duration of processing, mechanism of action etc. A simultaneous snapshot on various intellectual property related issues is given to highlight comprehensive approaches and strategies in the area of drug-re-purposing/repositioning. Further, a broad scan on various drug re-positioning activities suggests that earlier the initiation of parallel multi-faceted studies on potential molecules the more effective and fruitful the re-positioning results.

sripathi_kulkarni@cdri.res.in

Synthesis, molecular docking and biological activity of novel C3 substituted 1, 4-benzodiazepine derivatives as CCKA receptor antagonist

Sumitra Nain, Dharma Kishore, Swapnil Sharma and Sarvesh Paliwal
Banasthali University, India

Cholecystokinin (CCK) has been found to play a major physiological role in the regulation of gastrointestinal (GI) motility by acting on CCKA & CCKB receptor. Among CCKA and CCKB, CCKA receptors are mainly localized on pancreas, gallbladder, pylorus, intestine and the vagus nerve. In this present research work we have made an effort to design and synthesize C3 substituted 1, 4 benzodiazepines. As a first screen all the synthesized compounds were subjected to molecular docking. This led to the identification of five potential CCKA receptor antagonists. All the five compounds evaluated for their CCKA antagonist activity by in vitro rat ileum motility model. The compound IV, III showed significant CCKA antagonist activity.

nainsumitra@gmail.com

Notes: