Library Of Rare CNS Drugs Available For Collaboration

nPharmakon CNS Library: Unique Resource for CNS Drug Repurposing. The advantages of using existing drugs as starting points in drug discovery are well recognized; the drugs can be repositioned for new indications, used as high-quality lead compounds, or serve as molecular tools to reveal new ways of tackling a disease. However, the application of this approach in the area of CNS diseases has been limited, in part because there is no comprehensive, well-curated list of CNS drugs, and also because many such drugs are not easily available for testing.

To enable systematic drug repurposing in the CNS area, we have assembled a library of about 1,000 clinically tested drugs that can cross the blood-brain barrier. The library comprises “under the radar" small molecule drugs not available in other commercial libraries; FDA-approved drugs are excluded as easily available elsewhere. The library is available in 96-well and other formats, including solids.

The compounds in the library were selected via a detailed review of primary sources (articles in journals such as J. Med. Chem., patents, press releases, etc.), and international drug compendia (Martindale, PharmaSource, Merck Index). A major emphasis was put on confirming chemical structure, clinical status, and CNS bioavailability of each molecule selected, as well as QC of the library to ensure that each hit found is actionable. About 40% of the drugs are ex-US marketed drugs, and the rest are investigational. 55% of the drugs were developed in the 1980s and earlier; most drugs were developed in Western Europe (53%), US (27%), and Japan (11%). The collection is highly diverse in terms of original indications, molecular mechanisms of action, and chemical structure. Only synthetically accessible molecules suitable to serve as high quality leads were included; average molecular weight of the drugs in the collection is 320 Da.

Accessing Latest Science. nPharmakon is in discussion with a number of leading academic groups who have developed novel, high-value in vitro models of CNS pathology (using primary cells, induced pluripotent stem cells, etc.) that are not suitable for high-throughput screening. The objective is to screen the nPharmakon CNS library in such assays looking for leads, in vivo tools, and potential development candidates for neurodegenerative, neuroinflammatory, and other CNS diseases.

Partnership Opportunities. The CNS library is available only in the context of a collaboration with nPharmakon. We are seeking partners interested in (i) gaining access to the library; or (ii) sponsoring screens of the library in particular assays developed at academic centers, in return for early access to the results and an exclusive option to license the novel uses of the drugs and other resultant IP. The partner will have the option to secure exclusivity in specific disease areas, or to reserve particular compounds by removing them from the collection.

Our Company. nPharmakon LLC is a drug discovery and development company founded in 2008 by pharmaceutical industry scientists. The company has developed proprietary computational technology for drug retargeting – identification of previously unknown molecular targets of clinically safe compounds, and used the technology to identify modulators of key signaling pathways among older drugs. One drug has been advanced into clinic and partnered with a major Japanese pharma company. Drs. Dmitri Rebatchouk, Felix Sheinerman and Don Picker serve as the CEO, CSO and, VP Development at nPharmakon, respectively.