

Chris Senanayake, Ph.D.

Chief Executive Officer & Chief Scientific Officer

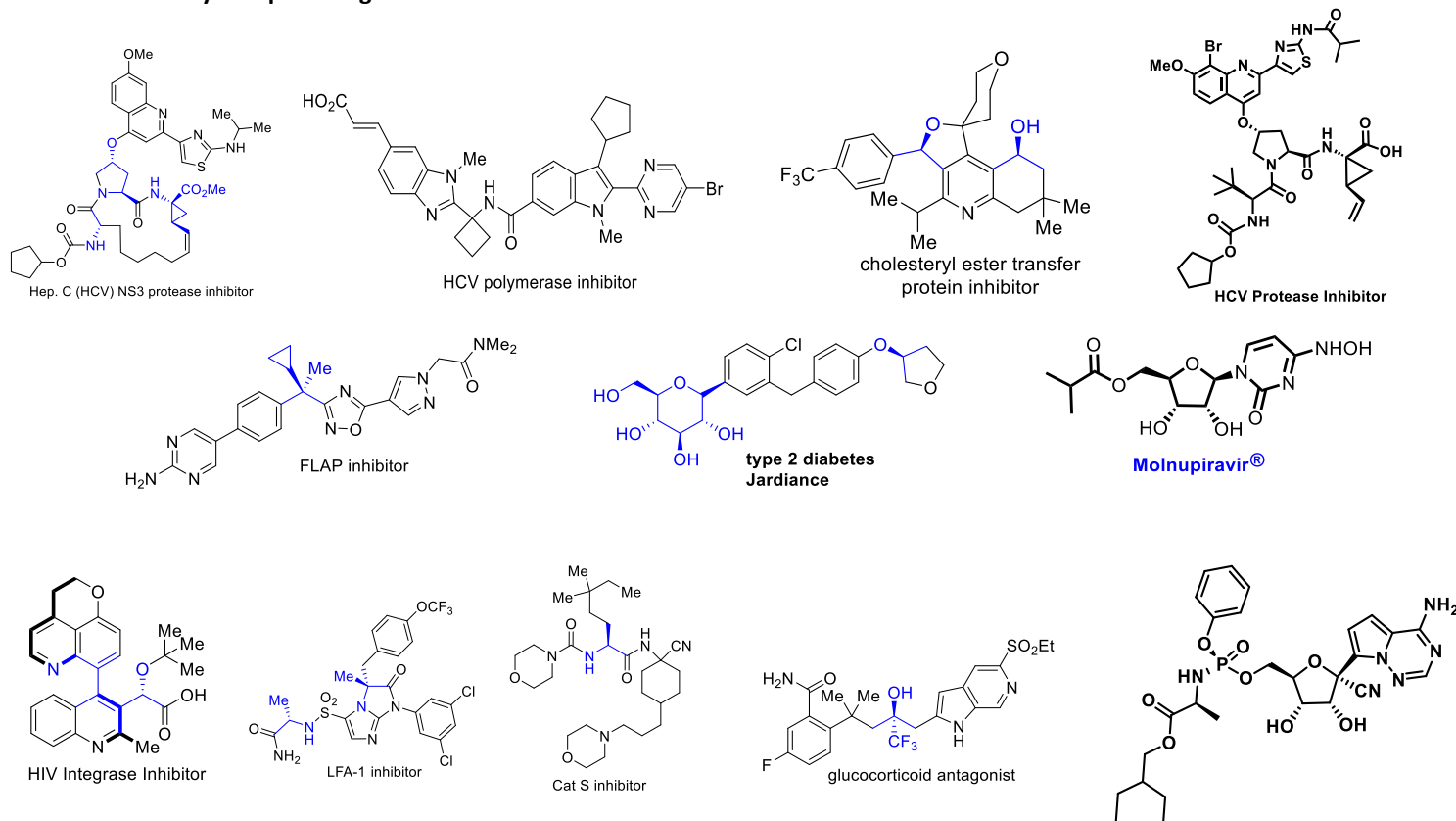
TCG GreenChem, Inc., 701 Charles Ewing Boulevard, Ewing, New Jersey 08628

Email: chris.senanayake@tcggreenchem.com

Novel Synthetic Approaches to Complex API Assembly

During the past two and half decades, my process research and development group is involved in the development of truly efficient, reliable, greener, and economically viable innovative process transformations for many drugs and drug candidates utilizing novel synthetic transformations. Due to these findings of effective innovative process solutions in a timely manner for important drug candidates have provided a myriad of benefits for process chemists to produce complex APIs in a rapidly for clinical development followed by commercialization. This lecture will be centered on several highlights of these solutions for finding ideal, and sustainable manufacturing processes of important APIs or intermediates for accelerated development *via* emphasis of metal catalysis.

Increasing Molecular Complexity of New Therapeutics: Architecturally Complex Drug Candidates



References:

- [1] "Sequential C-H Arylation and Enantioselective Hydrogenation Enables Ideal Asymmetric Entry to the Indenopiperidine Core of an 11 β -HSD-1 Inhibitor"; Wei, Xudong; Qu, Bo; Senanayake, Chris H. *J. Am. Chem. Soc.*, **2016**, 138(47), 15473-15481.
- [2] "Rhodium-Catalyzed Transnitration of Aryl Boronic Acids with Dimethylmalononitrile"; Malapit, Christian A.; Reeves, Jonathan T.; Senanayake, Chris H. *Angew. Chem, Int. Ed.* **2016**, 55(1), 326-330.
- [3] "Development of a Practical Process for the Synthesis of PDE4 Inhibitors"; Rogelio P. Frutos, Thomas G. Tampone, Chris H. Senanayake Organic Process Research & Development **2016**, 20, 982-988.
- [4] "Rhodium-Catalyzed Addition of Aryl Boronic Acids to 2,2-Disubstituted Malononitriles"; Malapit, Christian A.; Caldwell, Donald R.; Senanayake, Chris H. *Angew. Chem, In. Ed.* **2017**, 56(24), 6999-7002.
- [5] "Development of a concise, scalable synthesis of a CCR1 antagonist utilizing a continuous flow Curtius rearrangement"; Marsini, Maurice A.; Buono, Frederic G.; Senanayake, Chris H. *Green Chemistry* **2017**, 19(6), 1454-1461.
- [6] "Towards a practical, non-enzymatic process for molnupiravir from cytidine", Vijayagopal Gopalsamuthiram, Appasaheb L. Kadam, Senanayake, Chris. H. *ChemRxiv* **2021**, 1-6.
- [7] Xu, G, Senanayake, Chris. H, Tang, Wenjun. *Acc. Chem. Res.* **2019**, 52 (4), 1101-1112.