



HTC Chemistry to Accelerate Medicinal Chemistry Programs

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High-throughput experimentation (HTC) has emerged as a powerful tool in medicinal chemistry to accelerate drug discovery programs by rapidly screening and optimizing reaction conditions. The work carried out on the **SynTech Catalysis Laboratory**, specializes in HTC reaction condition screenings to remove synthetic bottlenecks throughout the medicinal chemistry portfolio within the Global Discovery Chemistry (GDC) organization of Novartis Biomedical Research.

Our lab specializes in the optimization of metal-catalyzed reactions commonly encountered in drug discovery programs, including metal-catalyzed cross-coupling reactions, hydrogenations, carbonylations, and asymmetric hydrogenations. We developed automated workflows and advanced crude analytical techniques to be able to rapidly screen many reaction conditions in parallel, allowing for systematic and efficient optimization of reaction parameters, such as catalysts, ligands, bases, solvents, and additives. This approach not only accelerates access to complex chemical matter for medicinal chemistry programs but also generates clean and reliable data for making informed decisions in the subsequent reaction optimization stages.

This talk will introduce some case studies showcasing the successful application of our HTC approach in accelerating drug discovery programs, overcoming synthetic challenges, and improving the efficiency of medicinal chemistry efforts.

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