September 15, 2021

Your Name, Title

Department

Address

East Lansing, MI 48824

Dear Dr. xxx,

We are delighted to collaborate with you through the MSU Medicinal Chemistry Core on your xxx grant entitled “xxxxx”.

The Medicinal Chemistry Core is fully equipped and has the expertise to assist faculty with chemical biology, high-throughput outcome triage, lead development, template hopping, structure activity relationship (SAR) development, structure-based design, route development and scale-up. The lab also supports microsomal stability and kinetic solubility measurements. The equipment and other capabilities are outlined in the appendix below.

The Medicinal Chemistry Core was established with the support of multiple units at MSU to assist researchers to bridge the drug discovery gap that often exists between basic research and preclinical drug development or other commercial applications.

The primary mission of the Medicinal Chemistry Core is to serve as a campus-wide resource, providing MSU investigators with expert consultation on all aspects of the preparation, purification and physical properties of chemical matter. We impact research in the following areas: screening and target validation, series identification and SAR development, metabolite synthesis, candidate identification and scale-up to support in vitro and in vivo efficacy models.

We have a breadth of expertise in small molecules, peptides, natural products, and macrolides using modeling, chemoinformatics, traditional synthesis strategies and parallel medicinal chemistry methods.

For your project, as we have discussed, we will assist by xxxxxx in Aim xxx. Based on the structure of the xxxx, the synthesis of these compounds should be straightforward."

We wish you luck with your application and we look forward to a very productive collaboration.

Sincerely,

Edmund Ellsworth, Ph.D.

Director, Medicinal Chemistry Core

Professor of Medicinal Chemistry

Department of Pharmacology & Toxicology

Michigan State University

**Medicinal Chemistry Core Resources**

**Laboratory and Equipment Supported**

* **Laboratory:** Research will be conducted in 979 square feet of laboratory space with adjacent solvent storage and preparative HPLC space in the Life Sciences Building at 1355 Bogue Street - East Lansing. The laboratory has fume hoods for synthesis and chromatography for five to seven associates or students.
* Advion LC/MS
* Two Medium pressure preparative chromatography (Isco CombiFlash) – normal and reverse phase
* Two Buchi rotary evaporators, associated pumps and vacuum controllers
* Four Seargent-Welch high vacuum pumps and three medium vacuum pumps
* 7 temperature controllers/stirrers; one orbital stirrer; three stirrers
* Labconco Lyophilzer
* Speed Vac evaporator
* Waters HPLC 600 delta
* Waters HPLC LC (module I plus) with an autosampler
* Semipreparative HPLC (Isco) – normal and reverse phase.
* Anton Paar Monowave reaction microwave
* Isotemp vacuum oven
* Two Mettler- Toledo analytical balances
* Heating oven
* The laboratory is equipped with all standard glassware and hardware required for running synthetic reactions and the purification of analogs.

**Technologies Supported**

* Traditional organic synthesis (mg to 100 g scale)
* Peptide Synthesis
* Parallel Medicinal Chemistry Methods
* Microsomal Stability and Kinetic Solubility

**Compound Libraries (~35,000 compounds)**

* LOPAC (1,280) – Library of pharmacological active compounds
* Prestwick Chemical Library (1,280) – 100% approved drugs (FDA, EMA and other agencies)
* MicroSource Spectrum Collection (2,320) – FDA-approved drugs, bioactives, and natural products
* GSK Published Kinase Inhibitor Set (558) – >30 kinase inhibitor chemotypes annotated for protein kinase family activity
* NCI/DTP Approved Oncology Drugs (114), Diversity Set (1,596), and Mechanistic Set (816)
* Maybridge Diversity Collection (25,000)
* MSU Department of Chemsitry Library (~500)

**Computational Resources**

* GreenScreen – Secure, web-enabled, compound and HTS data management resource
* Scifinder – Compound and patent search (site license)
* Chem Axon – structure-based modeling, chemical properties and structure clustering
* Data Warrior – Cheminformatics program for data visualization and analysis
* Zinc 15 data bases
* Chemdraw