

Core Synthesis Facility – Fall 2009 Newsletter

NDSU Dunbar 156 – stop in for a tour!

Objective:

The Core Synthesis Facility (CSF) was established at NDSU to act as a strong in-house support system, to facilitate principal investigators in accomplishing their research targets by:

- Synthesis of small molecules for biomedical applications
- Qualitative and quantitative analysis of samples of interest, using various analytical techniques
- Providing research consultations

Equipment:

- **Solvent Purification System:** obtain moisture-free solvents with high purity under hazard-free conditions
- **HPLC System with UV Detector:** analyze small molecules for purity and quantity
- **Ultrasonic Bath:** breakdown aggregates and dissolve solid compounds with low solubility
- **Combi-Flash Chromatography:** purify small molecules rapidly and efficiently with minimal solvent usage
- **Microwave Reactor:** carry out organic reactions within a short time and obtain greater yields of products
- **Kugelrohr Distillation System:** distill small volumes of liquids with boiling points > 300 °C under vacuum

Recent Accomplishments:

- Synthesized GM6001 as a MMP inhibitor for Dr. Kendra Greenlee (Biological Sciences)
- Attached a fluorescent tag (FITC) to aspartic acid for Dr. Bin Guo (Pharmaceutical Sciences)
- Synthesized substrates for MetAP assay for Dr. D.K. Srivastava (Chemistry & Biochemistry)
- Synthesized Sirtuin activators for Dr. D.K. Srivastava (Chemistry & Biochemistry)
- Synthesized Mannuronate standard for alginate analysis for Dr. Richard Niles (Marshall University)
- Developed a database of ~ 2000 small molecules, which were tested for MMP and HDAC enzyme inhibition at the Center for Protease Research

Contact Information:

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