#1	CONTACT INFORMATION: Timothy Hagen, Office: Faraday 350, Phone: (815)-753-1463

Procedure Title	**Using the Biotage Initiator Microwave Synthesizer**
Procedure Author	**Zheng Zhang**
Date of Creation/Revision	**9/22/2015 (Travis Helgren)**
Name of Responsible Person	**Timothy Hagen**
Location of Procedure	**LaTourette Hall (Lab: 334)**
Approval Signature	

#2	THIS STANDARD OPERATING PROCEDURE (SOP) IS FOR A:

☐ **Specific laboratory procedure or experiment**

X Generic laboratory procedure that covers several chemicals

☐ **Generic use of specific chemical or class of chemicals with similar hazards**

#3	PROCESS OR EXPERIMENT DESCRIPTION

The use of the Biotage Initiator Classic for the microwave assisted synthesis of compounds

Frequency:	☐ one time ☐ daily ☐ weekly ☐ monthly X other: Based on each experiment
Duration per Expt:	around 5-15 minutes; or _____hours

#4	SAFETY LITERATURE REVIEW & HAZARD SUMMARY

Review MSD sheet for chemicals used in the specific synthesis. Make sure all reactions are kept below 20 bar of pressure.

#5	**STORAGE REQUIREMENTS**

Shutdown instrument after use

#6	**STEP-BY-STEP OPERATING PROCEDURE**

Steps to include in your procedure:

1. Don personal protective equipment.

X appropriate street clothing (long pants, close-toed shoes)

X gloves; indicate type: Nitrile examination gloves

X safety goggles ☐ safety glasses ☐ face shield

X lab coats

☐ other:_____

2. Check the location and accessibility of the safety equipment that serves your lab:

ITEM	STATUS
Laboratory Fume Hood/Glove Box or other Ventilation Control	Location: Various Locations
Eyewash/Safety Shower	Location: Near front lab door/in the hallway

3. Weigh appropriate amounts of each chemical necessary for your reaction into the appropriately sized reaction vial (note: the microwave synthesizer requires the use of specialized vials and lids). Seal the vial using the lid-sealing tool supplied by Biotage. Place the vial in the reaction chamber in the microwave synthesizer.

4. Set your reaction conditions (generally only temperature and time) using the touch screen LED on the front of the instrument. Hit start to run your reaction. Make sure to monitor the pressure inside your reaction vial (the LED screen shows a plot of power output, temperature and pressure). If the pressure exceeds 20 bar, the seals will fail on the microwave synthesizer and an explosion may occur. Therefore, never exceed 18 bar of pressure. Once your reaction runs to completion, the

microwave synthesizer will cool your reaction vial to 50 deg C, at which point the sheath will retract and you can remove your vial. Remove the lid using pliers and remove the reaction contents as described in each specific synthetic procedure. Rinse lid with acetone and discard in the trash. Rinse vial with acetone and discard in glass waste container.
5. Dispose of hazardous solvents, solutions, mixtures, and reaction residues as hazardous waste. See EH&S Hazardous Waste Program http://www.ehs.niu.edu/ehs/chemical/waste.shtml
6. Clean up work area and lab equipment.
7. Remove PPE and wash hands.

#7	**WASTE DISPOSAL**

All waste may be placed in the appropriate organic waste container.

#8	**TRAINING REQUIREMENTS**

General Training *(check all that apply):*

XGeneral Safety & Emergency Preparedness

XChemical Safety for Laboratories

XRadiation Safety

☐Biosafety training

☐Other: Equipment cleaning procedure

Location Where Records Maintained:	

Laboratory-specific training *(check all that apply):*

X Review of SDS for other chemicals involved in process/experiment

X Review of this SOP

☐Other:_____

Location Where Records Maintained:	

#9	**PRIOR APPROVALS**

Prior approvals are required by the following University Committees:

Radiation Safety Committee: Radioactive material,
http://www.ehs.niu.edu/ehs/lasersafety/RAM/index.shtml
Radiation Safety Committee: X-Ray machines
http://www.ehs.niu.edu/ehs/lasersafety/XRay/index.shtml
Laser safety: Laser producing equipment Class 3b or above.
http://www.ehs.niu.edu/ehs/lasersafety/Laser/index.shtml
IACUC: Animal use in research
http://www.orc.niu.edu/orc/animal_research/index.shtml
IBC: Recombinant DNA, potential pathogens, human tissue/body fluids
http://www.orc.niu.edu/orc/biosafety/niupolicy.shtml