

5. The students will learn to present scientific data clearly and effectively through both written and verbal communication.

Schedule of Experiments

Aug 28: NMR training Group A

Aug. 30: Check in and NMR training Group B

Sept. 6: Reaction of methyl 4-formylbenzoate with NaBH₄ / GC/MS training

Sept. 11: Hetero-Diels-Alder Set up, NMR lecture

Sept. 13: Work up Hetero-Diels-Alder reaction

Sept. 18: Diaza-Claisen rearrangement and work up

Sept. 20: Optimize chromatography eluent by TLC. Purification of diaza Claisen rearrangement product by chromatography (**NMR spectrum interpretation exercise due**)

Sep 25: Synthesis of (4-nitrophenylethynyl)trimethylsilane *via* Pd catalyzed Sonogashira coupling

Sep. 27: Purification of (4-nitrophenylethynyl)trimethylsilane via chromatography

Oct. 2, 4, 11: Preparation of a 4-mer peptide by solid phase peptide synthesis, product purification and analysis by 2D NMR and MSⁿ-Mass Spec. and maybe a "fun lab". (**Chemical database search assignment due**)

Oct. 16: LDA titration/introduction to inert atmosphere techniques and TBS protection of 2-hydroxy cyclohexanone

Oct. 18: Purification of the resulting α -silyloxy ketone via chromatography

Oct. 23: Addition of lithiated ethyl diazoacetate to the ketone to give γ -silyloxy- β -hydroxy- α -diazoacetate (**Green Ketone Synthesis Assignment First Draft Due**)

Oct. 25: Purification of γ -silyloxy- β -hydroxy- α -diazoacetate

Oct 30: Lewis acid mediated ring fragmentation of γ -silyloxy- β -hydroxy- α -diazoacetate and formation of a tricyclic nitrogen containing heterocycle via intramolecular azomethine ylide 1,3-dipolar cycloaddition and yield determination via NMR internal standard.

Nov. 1: Chemiluminescence (**Green Ketone Synthesis Assignment Final Draft Due**)

Nov. 6, 8, 13: Green Synthesis of ketone special project

Nov. 15: no lab

Nov. 20 and 22: Happy Thanksgiving

Nov. 27

Lab Report 8: Experiments run Nov. 1 → Nov. 13 will be combined into one lab report due on 12/7

Dec. 6th: Final day to turn in last lab report.

Group A

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Group B

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