Weekly Report Expectations

**Week One Report Expectations**

1. Write a standard synthesis style lab report for your Scheme 1 reaction (1 → 3).
   - Most of you will have made extensive progress on Scheme 2. But save all of that, and submit your report for Scheme 2 in your Week 2 report.
2. Show all calculations.
3. Make sure that all structures are drawn explicitly. None should have an “R1” or anything like that included, you should illustrate each structure with your R1 group drawn out, whether that’s methyl or phenyl or 4-methoxyphenyl or whatever.
4. Include procedural details and observations as usual.
5. Calculate mass yields, and percent yields, etc., for product 3.
6. Include your NMR-2 and your NMR-3.
   - These must be clearly labeled. See the section on NMR and GC-MS analysis and reporting for more details.
   - For your NMR-3, be sure to draw your structure, and then provide an abbreviated summary report. This should include a listing of chemical shifts for non-aromatic hydrogens, and an assignment of which hydrogen in the molecule each one is.
   - Note: you do not need to include aromatic H’s, N-H’s, or impurities/solvents/contaminants in the abbreviated summary report.
   - By putting definite labels on (for example, NMR-3b…), you will be able to easily refer to that in your report. (For example, “NMR-3b was submitted at this point.” Or “NMR-3b shows considerable product, but it is clearly not clean. There is extensive solvent visible, as well as benzyl alcohol…”.)
7. Include your GC-MS-3, and print and attach mass spectra for the most significant peaks.
8. Include a thorough discussion/analysis section. The analysis/discussion section needs to address what the yield information told you, and what the NMR and GC-MS data tells you about both the success and the efficiency of your reaction, and the purity of your product 3 or 6.
   - see the section in the manual on NMR and GC-MS to give you some help in what to look at and what kind of formatting expectations apply.
9. Note: Keep copies of your reports and NMR’s and GC-MS’s, so that later on you can use these for your Week 2 report and your Final Report and in

**Week One Report Expectations for students who did Scheme 4:** Do as much as you can from the instructions above, depending on where you stopped. If you completed Scheme 4 and isolated your product, then write the full report. If you did not complete the isolation and analysis, write up what you did and submit that. But make sure you save everything, because you’ll need to submit a more complete report for Week 2.

**Week Two Report**

1. Write a standard synthesis style lab report for your Scheme 2 reaction (3 → 5 → 6).
   - Most of you will have made extensive progress on Scheme 3. But save all of that, and submit your report for Scheme 3 in your Week 3 report.
2. Show all calculations.
3. Make sure that all structures are drawn explicitly. None should have an “R1” or anything like that included, you should illustrate each structure with your R1 group drawn out, whether that’s methyl or phenyl or 4-methoxyphenyl or whatever.
4. Include procedural details and observations as usual.
5. Calculate mass yields, and percent yields, etc., for product 6.
6. Include your NMR-5 and your NMR-6.
   - These must be clearly labeled. See the section on NMR and GC-MS analysis and reporting for more details.
   - For your NMR-6, be sure to draw your structure, and then provide an abbreviated summary report. This should include a listing of chemical shifts for non-aromatic hydrogens, and an assignment of which hydrogen in the molecule each one is.
   - Note: you do not need to include aromatic H’s, N-H’s, or impurities/solvents/contaminants in the abbreviated summary report.
7. Include your GC-MS-6, with mass spectra attached for the main peaks. Do library analysis on the most significant contaminants.
8. Include a thorough discussion/analysis section. The analysis/discussion section needs to address what the yield information told you, and what the NMR and GC-MS data tells you about both the success and the efficiency of your reaction, and the purity of your product. See the section in the manual on NMR and GC-MS to give you some help in what to look at and what kind of formatting expectations apply.
9. Note: Keep copies of your reports and NMR’s and GC-MS’s, so that later on you can use these for your Week 2 report and your Final Report and in

Week Two Report Expectations for students who did Scheme 4: Do a complete synthesis style report on your Scheme 4 chemistry. Most or all of this you may have already written and submitted for your Week One report, but just finish it all and resubmit the completed version. See the instructions above.

Week Three Final Report Expectations:
Write up a Synthesis style lab report for Scheme 3. Use some of the guidelines for the previous reports to help you structure this.

Do a thorough discussion/analysis for the Scheme 3 chemistry.

Final Project Report
1. Fill out the overall project data sheet.

2. Attach copies of all NMR’s and GC-MS’s.
   • These can be photocopies of ones you’ve already submitted but haven’t gotten graded and returned yet, or if I have gotten them back to you can simply rip them off from the originals and resubmit.

3. Then, add another discussion/analysis section for the overall three-week project.