

You will work with a partner on this lab; each student will perform the column chromatography experiment (Experiment 16B) on Monday. Then, on Wednesday, one of the partners will do the thin-layer chromatography (TLC) experiment outlined in Experiment 16C, and the other will do the TLC experiment outlined in Experiment 5A.

• **Pre-lab:**

Read: Experiment 5 Part A only (pp. 42 – 45), Experiment 16 Parts A, B and C (pp. 136 – 142)

Skim: Technique 19 (pp. 756 – 777), Technique 20 (pp. 777 – 792)

Prepare for class on Monday, February 26: “Purpose,” and “Materials and methods”.

Reserve the next few pages for “Procedure” and “Data” and “Results”. Especially for the data section, you will be recording a series of column chromatography data *and* you will sketching *both* your TLC plate and your partner’s TLC plate, so leave a few blank pages.

Data section: Prior to lab, make a data table to record the behavior of the column chromatography column, resembling this:

Approximate eluant volume (mL)	Column observations

Note that the eluant volume is approximate because the five test tubes will contain different amounts of collected fluid and there are no convenient graduations to measure volumes on either the column or the test tube.

Goal for Monday: extract the spinach pigments, store the redissolved pigment in a vial (to be placed in the freezer until Wednesday), run the chromatography column, store the dried pigments for Wednesday in your drawer. Complete the IR and NMR of the essential oils experiment, if desired.

Goal for Wednesday: perform either the TLC experiment on the spinach pigments or on the fluorene family compounds, make sure to share TLC data with your partner. We will have a lecture on the separation scheme lab coming up, as well as the lab practical.

• **Post-lab:**

Generate two tables (one for each TLC plate) of R_f values and color/chemical. Put this in the “analysis/calculation” section.

In the “conclusion” section:

Answer points 2 and 3 under “Report — Experiment 5A” on page 50 of the text.

Answer questions 1 and 4 under “Questions” on page 142 of the text.

• **Lab Result Report: (Due Monday, March 5 at the beginning of lab)**

Photocopy the lab, all parts.

Answer problems:

End of Technique 19 (page 777): 3, 4, 6

End of Technique 20 (page 791): 1, 3

No abstract is needed.