Name	Template – copy by hand into lab notebook Lab Partner
TA Name	Section Day Time

Experiment 1 Worksheet – Column Chromatography

Use as reference for notebook preparation – everyone submits on Canvas individually after lab

Pre-Lab Requirements

- 1. Dress for lab see safety rules arrive a few minutes early
- 2. Lab Notebook: copy templates below into designated notebook
 - Purpose, scheme, and reagent table
 - **Procedure Diagrams** must be complete before you can start the lab

A. Experimental Purpose and Structures of Excedrin Components

B. Reagent Table

* Fill in properties before lab; leave mass (mg) and millimoles (mmol) blank – fill in during lab

Name	Volume	Density	Mass	milli moles	Molecular Mass	Boiling or melting point	Hazards
Excedrin	-						
Silica	-						
Ethyl acetate			-	-			
Hexanes			-	-			
Acetone			-	-			
Aspirin	-						
Acetaminophen	-						
Caffeine	-						

See Slugs@home for pics & videos of the full lab!

C. Procedure Diagrams

- Use the procedure from the lab PDF create your hand-drawn experimental instructions
 - o Simple sketches & labels for all equipment, chemical names with amounts, & transfers
 - Include clean-up & safety notes throughout your procedure and leave space for observations
- Format: Break it up with flow charts, bullet-points, comic strip, and/or whatever works for you!
 - \circ Avoid copying the procedure word-for-word.
 - o Make it easy for anyone to follow your procedure without referring to this document.
- Slugs@home Exp 1 website Equipment & Safety pages; pictures & videos of the whole lab
- The class notes include useful diagrams as well
- Use as many pages as needed at least 3 pages is typical
- 1. Active ingredients in Excedrin Weigh tablet, crush, dissolve, filter
- 2. Prepare & load the column Rota-vap, addition of SiO₂ and Excedrin- SiO₂ mixture
- 3. Run the column add solvents and collect fractions
- 4. TLC analysis spot, run, and visualize one representative plate
- 5. Isolation of components combine and concentrate (rota-vap) one representative sample

Mass of Excedrin tablet _____ g

Sketches of TLC plates and calculated R_f values for each spot:

<u>Standards</u> (pure ACE, ASP, & CAF) **Column Fractions**

TLC results for Excedrin column separation (Retention Factor, R_f values)

	ASP standard	ACE standard	CAF standard	F1	F2	F3	F4	F5	F6	F7
ASP										
ACE										
CAF										

Mass recoveries after concentration:

ASP_____g ACE_____g CAF_____g

Percent recoveries = (mass recovery) / (mass of tablet) x 100%

ASP ______% ACE _____% CAF _____%