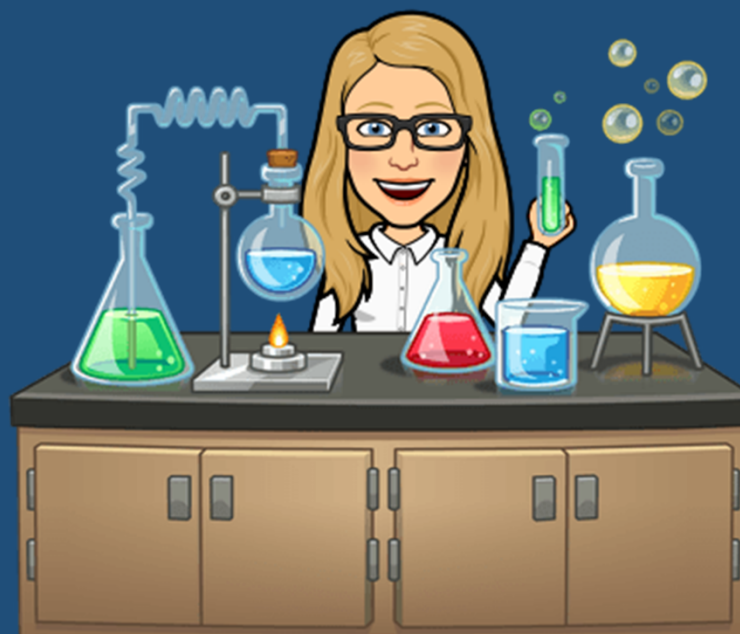


For clicker question voting, go to:
<https://pollev.com/lauriestarke263>



Dr. Laurie S. Starkey
Cal Poly Pomona

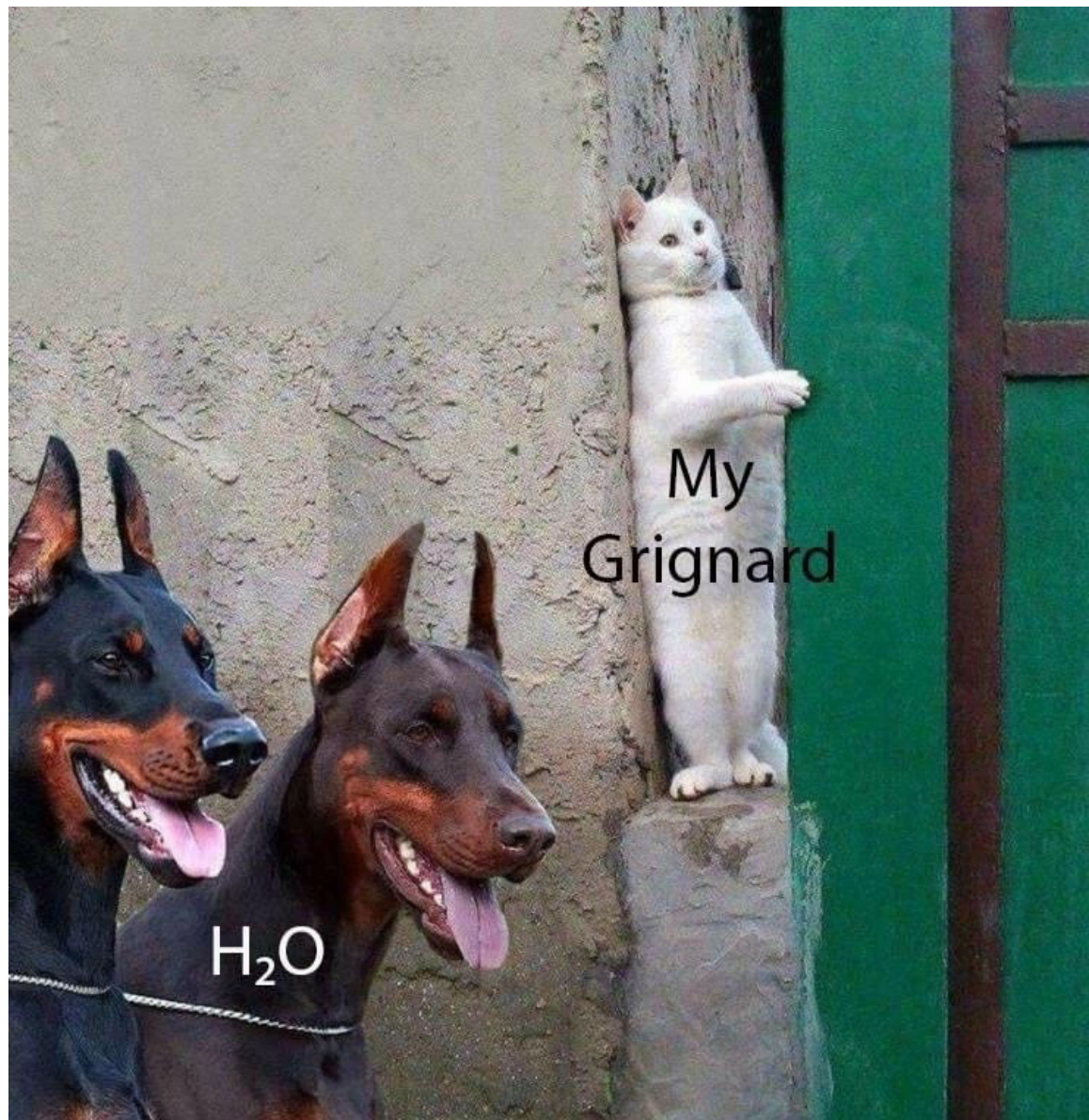
CHM 3150 Organic Chemistry II

9/4/25

Keep those Grignard reactions dry!



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Today's Topic:

Reactions of Alcohols (Ch. 12)

Daily To-Do

Flipped Lectures

Step 3 **Read**

- Read Klein 12.9, 12.10, 12.13
**Reactions of ROH (Dehydration, Oxidation,
Tosylation)
& Synthesis Strategies**
- Watch flipped lecture
- Work through **SkillBuilders 12.6, 12.7, 12.8, 12.9**

Reactions of alcohols

45 minutes, *skeleton notes pages 12-8 to 12-11*

Practice

Watch



Alcohols, Part II

Intro	0:00
Oxidation Reactions	0:08
Oxidizing Agents: Jones, PCC, Swern	0:09
'Jones' Oxidation	0:43
Example 1: Predict Oxidation Reactions	2:29
Example 2: Predict Oxidation Reactions	3:00
Oxidation Reactions	4:11
Selective Oxidizing Agents (PCC and Swern)	4:12
PCC (Pyridinium Chlorochromate)	5:10
Swern Oxidation	6:05
General [ox] Mechanism	8:32
General [ox] Mechanism	8:33
Oxidation of Alcohols	10:11
Example 1: Oxidation of Alcohols	10:12
Example 2: Oxidation of Alcohols	11:20
Example 3: Oxidation of Alcohols	
Example	
Predict: PCC Oxidation Reactions	
Tosylation of Alcohols	
Introduction to Tosylation of Alcohols	
Example	
Example: Tosylation of Alcohols	
Reductions of Alcohols	
Reductions of Alcohols via $\text{S}_{\text{N}}2$ with Hydride	
Reductions of Alcohols via Dehydration	
Conversion of Alcohols to Alkyl Halides	
Conversion of Alcohols to Alkyl Halides via Tosylate	
Conversion of Alcohols to Alkyl Halides	
Using HX	
Mechanism	
Conversion of Alcohols to Alkyl Halides	
Reagents that Provide LG and Nu: in One 'Pot'	
General Mechanisms	
Example 1: General Mechanisms	
Example 2: General Mechanisms	
Example	
Transformation of Alcohols	

Reactions of Alcohols

Today's Topic: Alcohols Part 3

Synthesis of Alcohols by Functional Group Interconversion (FGI)	6:00
Synthesis of Alcohols by Functional Group Interconversion Overview	6:01
Alcohols by Reduction	7:43
Ketone to Alcohols	7:45
Aldehyde to Alcohols	8:26
Carboxylic Acid Derivative to Alcohols	8:36
Alcohols by Hydration of Alkenes	9:28
Hydration of Alkenes Using H_2O^+	9:29
Oxymercuration-Demercuration	10:35
Hydroboration Oxidation	11:02
Alcohols by Substitution	11:42
Primary Alkyl Halide to Alcohols Using NaOH	11:43
Secondary Alkyl Halide to Alcohols Using Sodium Acetate	13:07
Tertiary Alkyl Halide to Alcohols Using H_2O	15:08
Synthesis of Alcohols by Forming a New C-C Bond	15:47
Recall: Alcohol & RMgBr	15:48
Retrosynthesis	17:28
Other Alcohol Disconnections	19:46
Synthesis Using PhMgBr : Example 2	23:05

Synthetic Strategies



*Do you know what this
weekend is?*

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
6	7	8	9	10	11	12

Coming up...Chapter 13 (Ethers & Epoxides), and Exam I

CHM 3150 Organic Chemistry II, Dr. Laurie S. Starkey, Fall 2025					
<i>Tentative Schedule (Chapter and Worksheet #)</i>					
Week	Mon	Tues	Wed	Thurs	Fri
0	8/18	8/19	You are here	8/21 Review 7-11 #1	8/22
1	8/25	8/26 Review 7-11 #2		8/28 Ch. 12 #1	8/29
2	9/1 Holiday	9/2 Ch. 12 #2	9/3	9/4 Ch. 12 #3	9/5
3	9/8	9/9 Ch. 13 #1	9/10	9/11 Ch. 13 #2	9/12
4	9/15	9/16 Ch.13 #3, Review	9/17	9/18 Exam I	9/19

To prepare for an organic chemistry exam, what is the best use of my time?

- A) Watch YouTube videos.
- B) Work on textbook problems.
- C) Rewrite my notes.
- D) Rewatch the Educator lectures.
- E) Attend office hours.

To prepare for an organic chemistry exam, what is the best use of my time?

A) Watch YouTube videos. ?!!

* B) Work on textbook problems. #1

* C) Rewrite my notes. passive

D) Rewatch Dr. Starkey's lectures passive

E) Attend office hours. Got Questions?
lecture ← worksheet ← textbook problems

To prepare for an organic chemistry exam, what is the SECOND best use of my time?

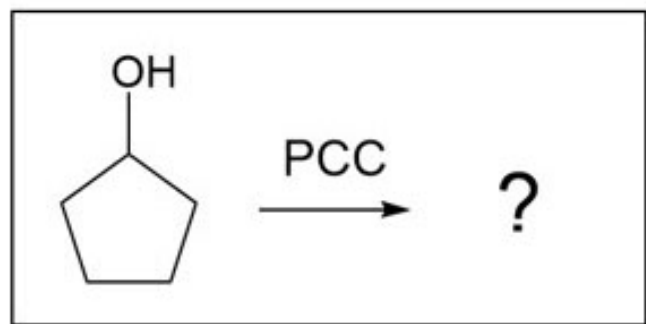
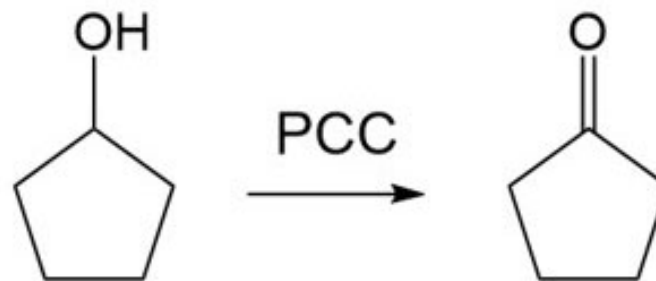
- A) Watch YouTube videos.
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To prepare for an organic chemistry exam, what is the SECOND best use of my time?

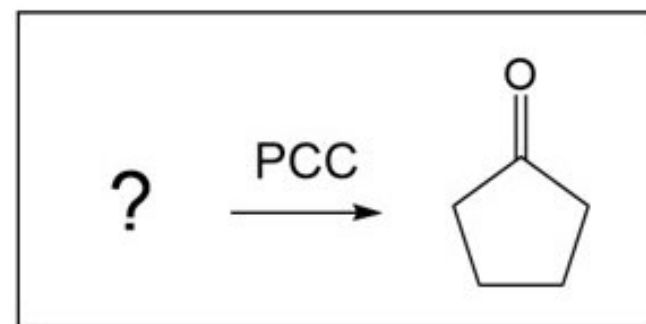
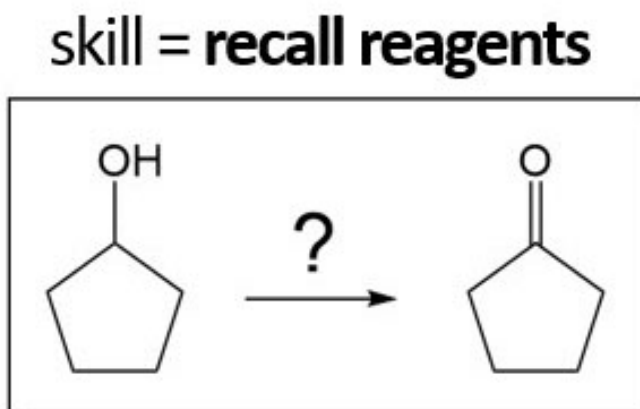
-
- ~~A) Watch YouTube videos.~~
- B) Work on textbook problems.
- ~~C) Rewrite my notes.~~
- ~~D) Rewatch the Educator lectures.~~
- ~~E) Attend office hours.~~

Flashcards to Memorize Learn a Skill

Every new reaction
creates THREE flashcards



skill = **predict product**



skill = **retrosynthesis**

This week's Friday5 – share a picture of your flashcards!

Where can I find a summary of reagents/rxns?

Wiley Reader to access textbook

8.6 Acid-Catalyzed Hydration 427
8.7 Oxymercuration-Demercuration 432
8.8 Hydroboration-Oxidation 434
8.9 Catalytic Hydrogenation 440
8.10 Halogenation and Halohydrin Formation 446
8.11 Syn Dihydroxylation 450
8.12 Epoxidation and Anti Dihydroxylation 452
8.13 Ozonolysis 455
8.14 Predicting the Products for Reactions of Alkenes 457
8.15 Synthesis Strategies 460

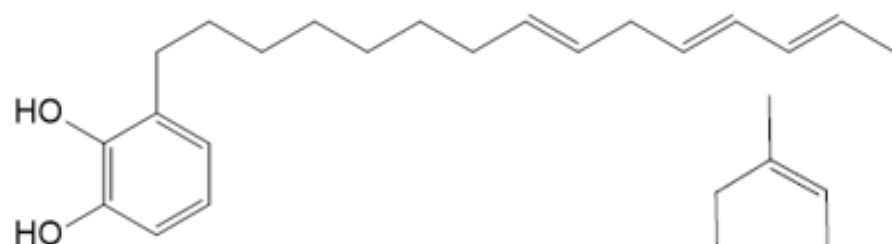
REVIEW OF REACTIONS 469

REVIEW OF CONCEPTS AND VOCABULARY 470
SKILLBUILDER REVIEW 471
PRACTICE PROBLEMS 474

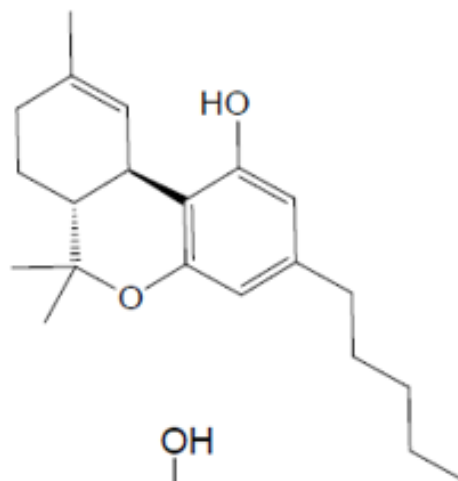
REVIEW OF REACTIONS

1. Hydrohalogenation (Markovnikov)
2. Hydrohalogenation (anti-Markovnikov)
3. Acid-catalyzed hydration and oxymercuration-demercuration
4. Hydroboration-oxidation
5. Hydrogenation
6. Bromination
7. Halohydrin formation
8. Anti dihydroxylation
9. Syn dihydroxylation
10. Ozonolysis

Interesting Phenols: Can You Match the Structure with the Name?

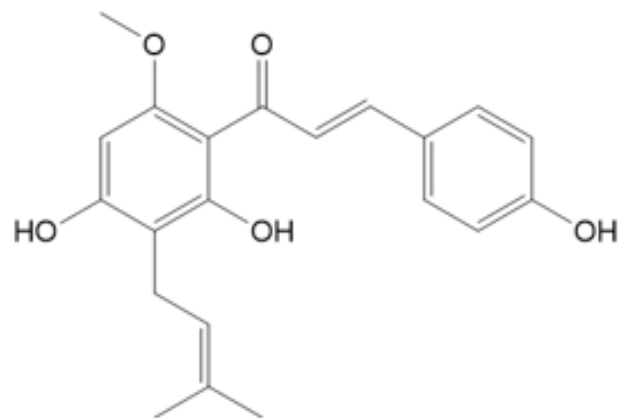


xanthohumol
hops flavor &
protects from Alzheimer's

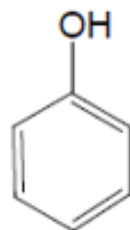


TetraHydroCannabidiol
marijuana component

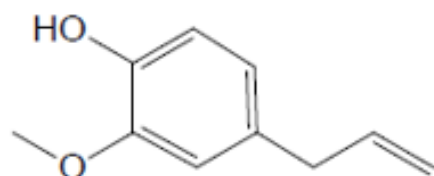
eugenol
essential oil in cloves
(pumpkin spice)



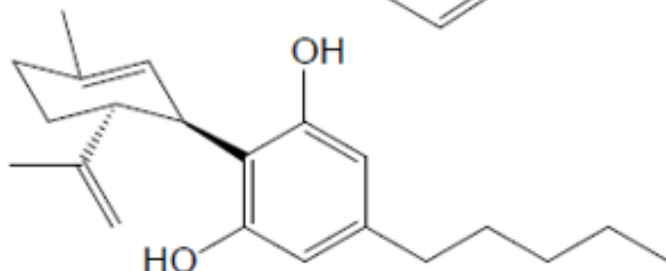
urushiol
poison ivy allergy & irritant



Chloraseptic spray
sthetic/analgesic for sore throats



cannabidiol
pain-reliever from hemp



<https://www.acs.org/content/acs/en/molecule-of-the-week/archive.html>