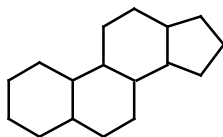


**Chemistry 447**  
**Organic Structure Analysis Laboratory**  
**Spring 2003**

**Unknowns:**

- A: contains aromatic ring and recognizable functional group. None of these compounds is optically active.
- B: a terpene derivative. These compounds are often used in flavors and fragrances and rarely contain an aromatic ring. Compound may be optically active.
- C: a steroid or steroid derivative/precursor. The basic ring structure is:



Care in handling should be taken since these compounds may have physiological effects. Compound certain to be optically active.

- D: two-component mixture separable by extraction
- E: two-component mixture separable by chromatography

**Suggested procedure:**

1. Physical examination (physical state, color, odor)
2. Purity of sample (e.g., TLC, GC, HPLC)
3. Chemical tests (solubility and characterization)
4. Spectral examination (NMR, GC/MS, IR, optical rotation)

Each step leads you further towards the correct answer, but beware of your own prejudices, conflicts in interpretation, and misleading information. What is the validity of each observation/analysis? What are the limitations? What sources of information concerning the properties of a compound are valid/not valid? Can you be successful in this course if you are skeptical in interpretation?

In laboratory, as well as lecture, courses there are standards of conduct to which all are expected to adhere. University policies and procedures can be found at:

<http://w3.arizona.edu/%7Estudpubs/policies/ppmainpg.html>