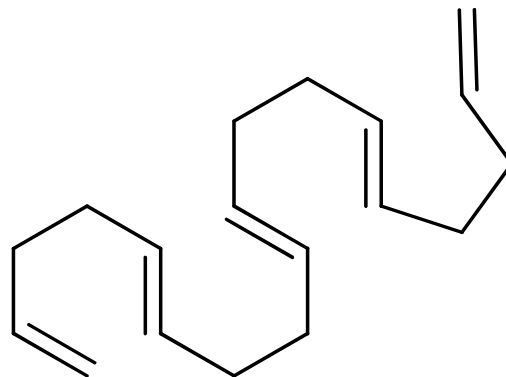
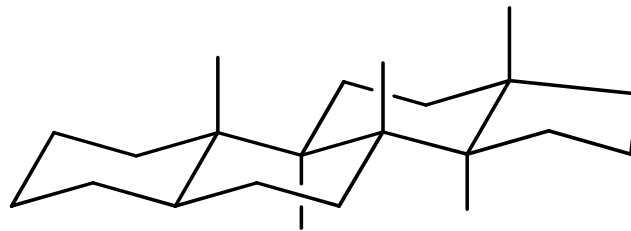
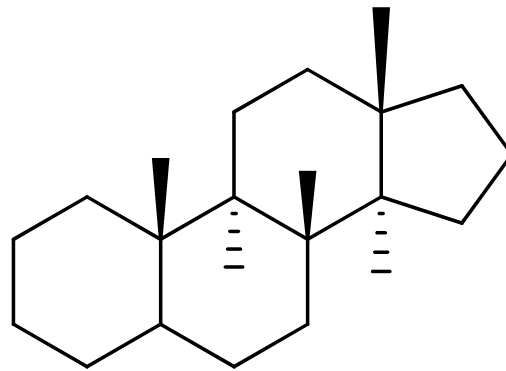


Steroids

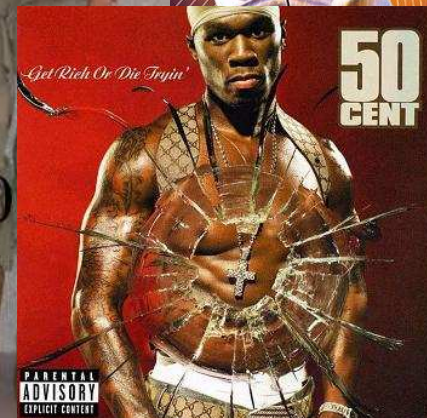
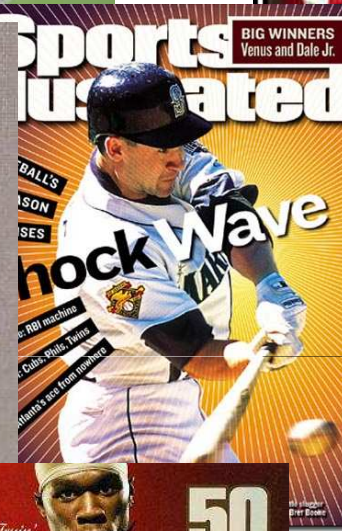
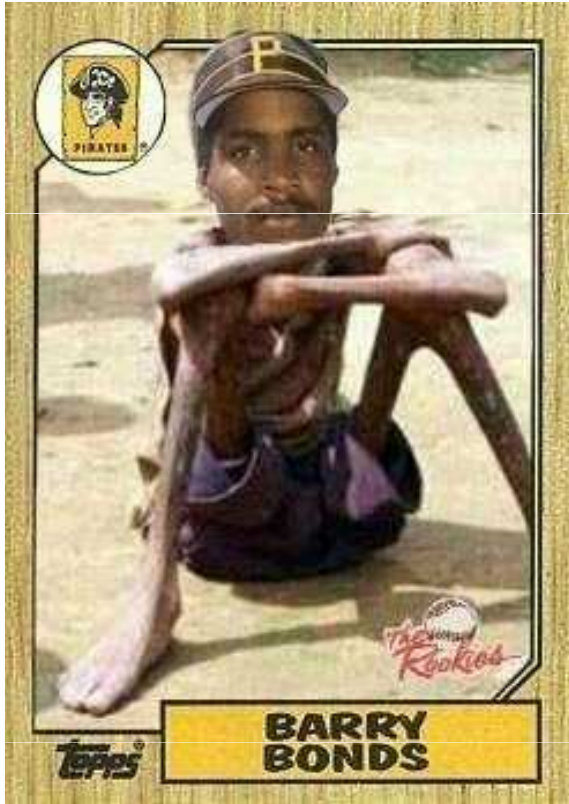


Colin
March 11 2009

Framework



Steroids in Pop-Culture

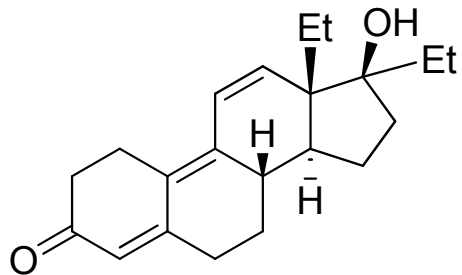


"I'll be back!"

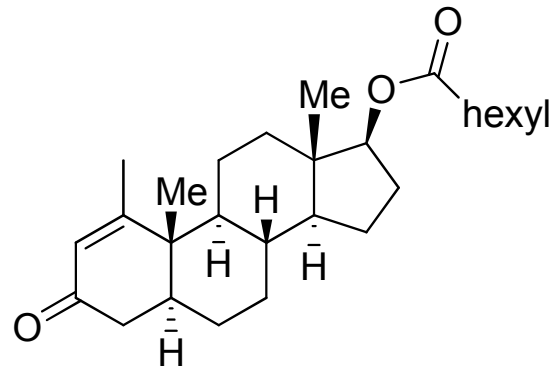


"Oh, my back!"

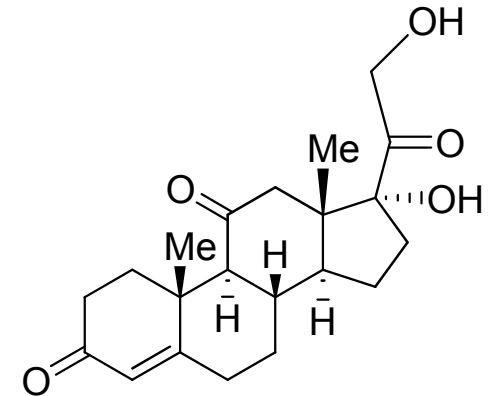
Steroids in Pop-Culture



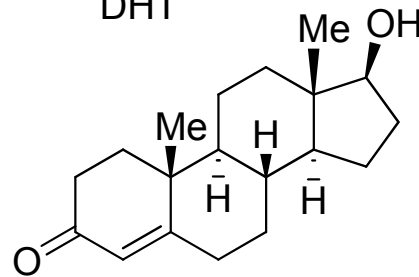
THG "the clear"



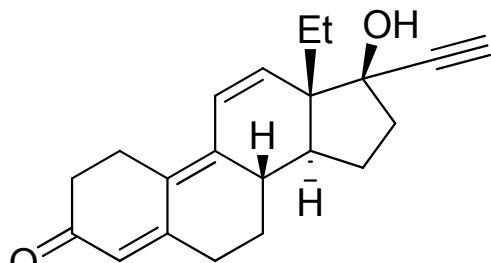
DHT



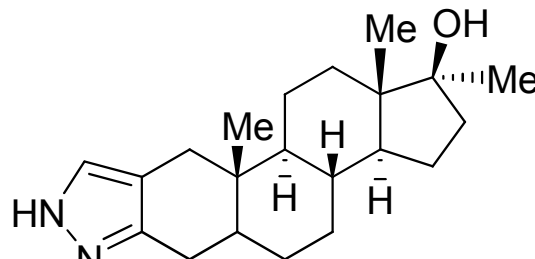
cortisone



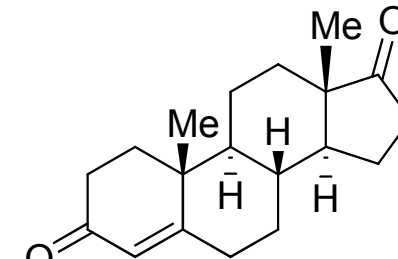
testosterone



gestrinone

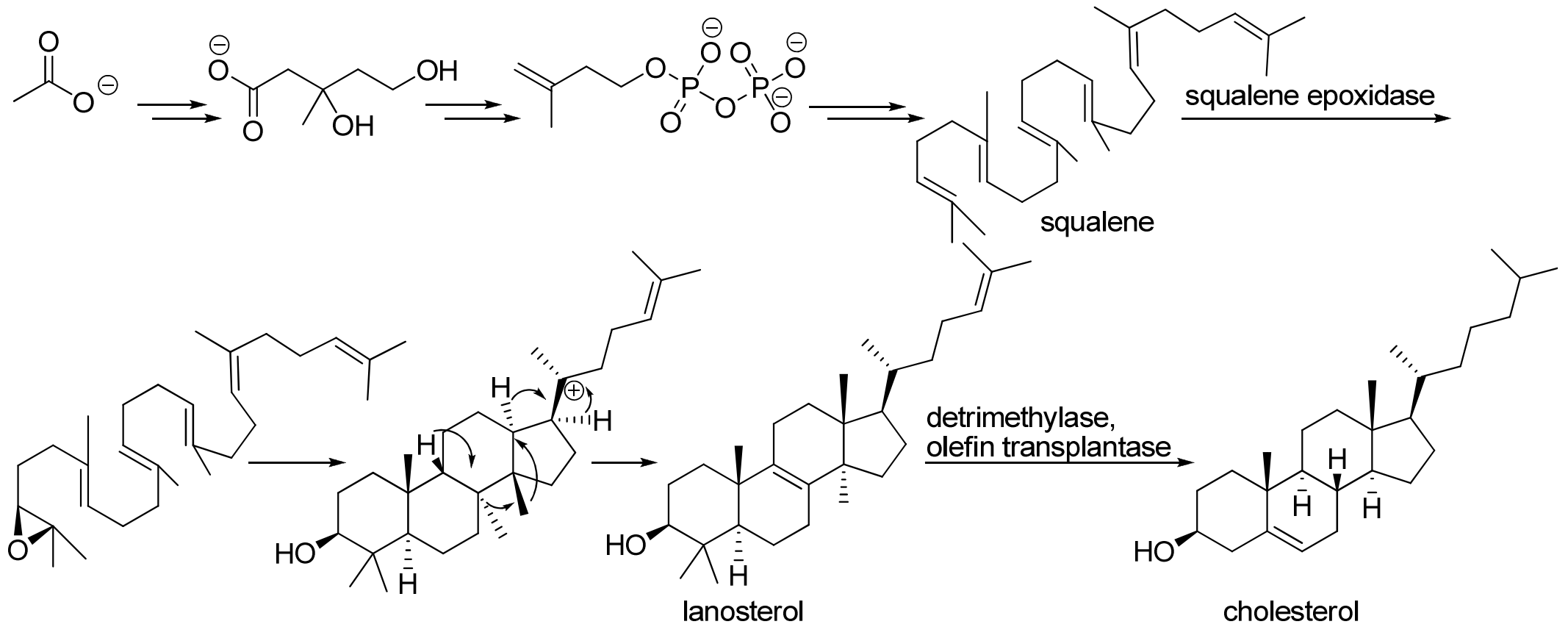


stanozolol



androstenedione

Cholesterol Synthesis

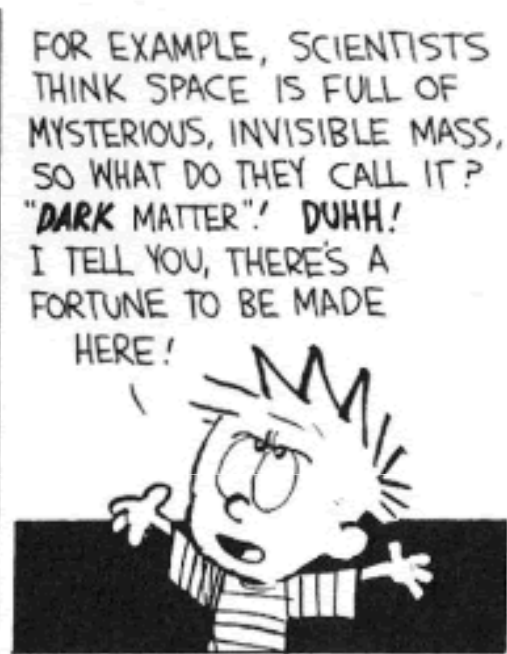




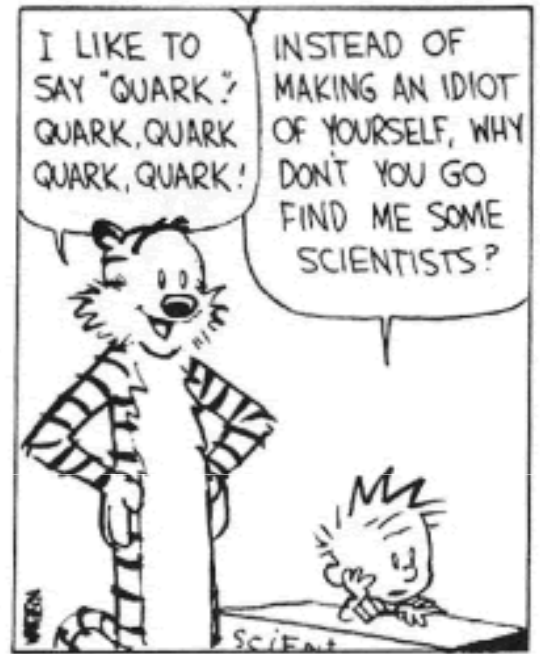
SCIENTIFIC NAMES?



SURE. SCIENTISTS COME UP WITH GREAT, WILD THEORIES, BUT THEN THEY GIVE THEM DULL, UNIMAGINATIVE NAMES.



FOR EXAMPLE, SCIENTISTS THINK SPACE IS FULL OF MYSTERIOUS, INVISIBLE MASS, SO WHAT DO THEY CALL IT? "DARK MATTER!" DUHH! I TELL YOU, THERE'S A FORTUNE TO BE MADE HERE!



I LIKE TO SAY "QUARK." QUARK, QUARK QUARK, QUARK!

INSTEAD OF MAKING AN IDIOT OF YOURSELF, WHY DON'T YOU GO FIND ME SOME SCIENTISTS?

Dr. Hedberg, Enzymologist

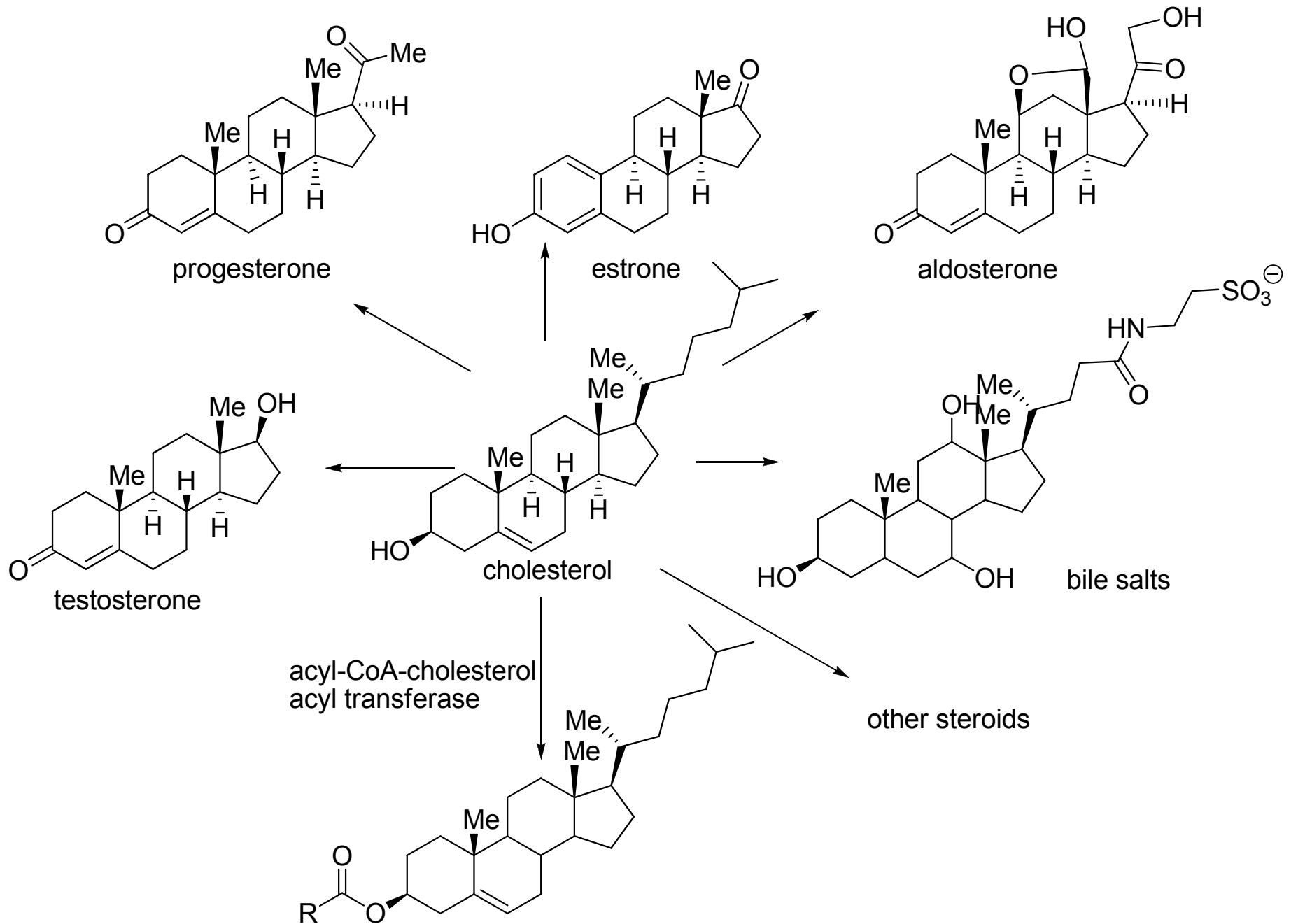
“I want to get a job as someone who names kitchen appliances. Toaster, refrigerator, blender.... all you do is say what the shit does, and add "er". I wanna work for the Kitchen Appliance Naming Institute. Hey, what does that do? It keeps shit fresh. Well, that's a fresher....I'm going on break.”



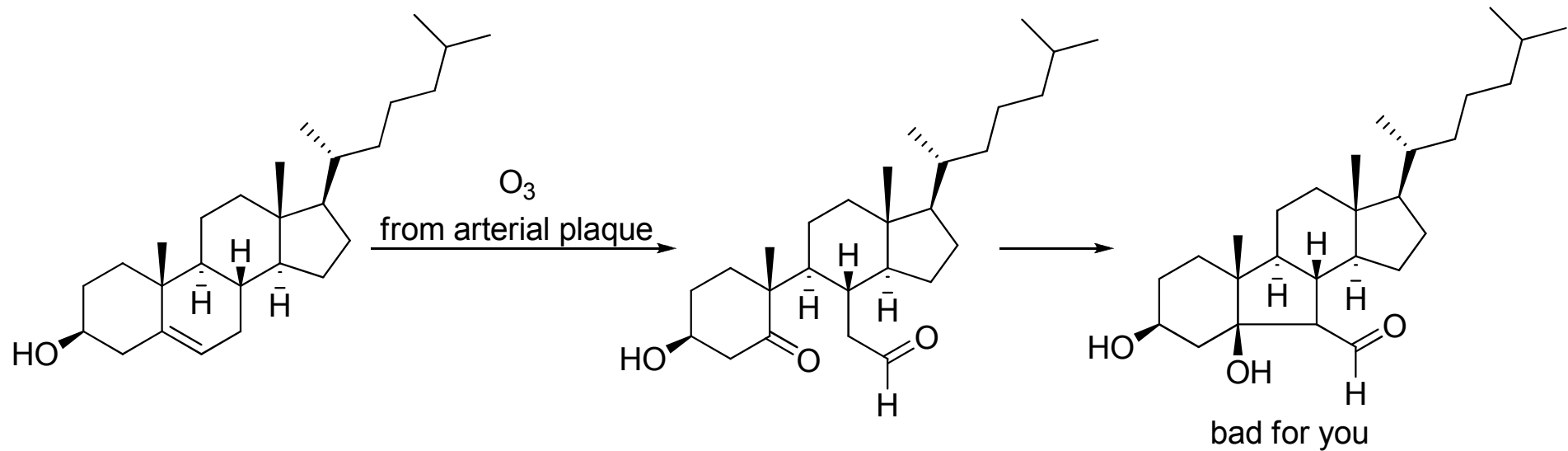
nerdase

“I want to get a job as someone who names enzymes. Aldolase, cyclase, reductase.... all you do is say what the s#!* does, and add "ase". I want to work for the Enzyme Naming Institute. Hey, what does that do? It does a Finkelstein! Well, that's a finkelsteinase....I'm leaving the lab for a bit.”

Cholesterol IS Good For You

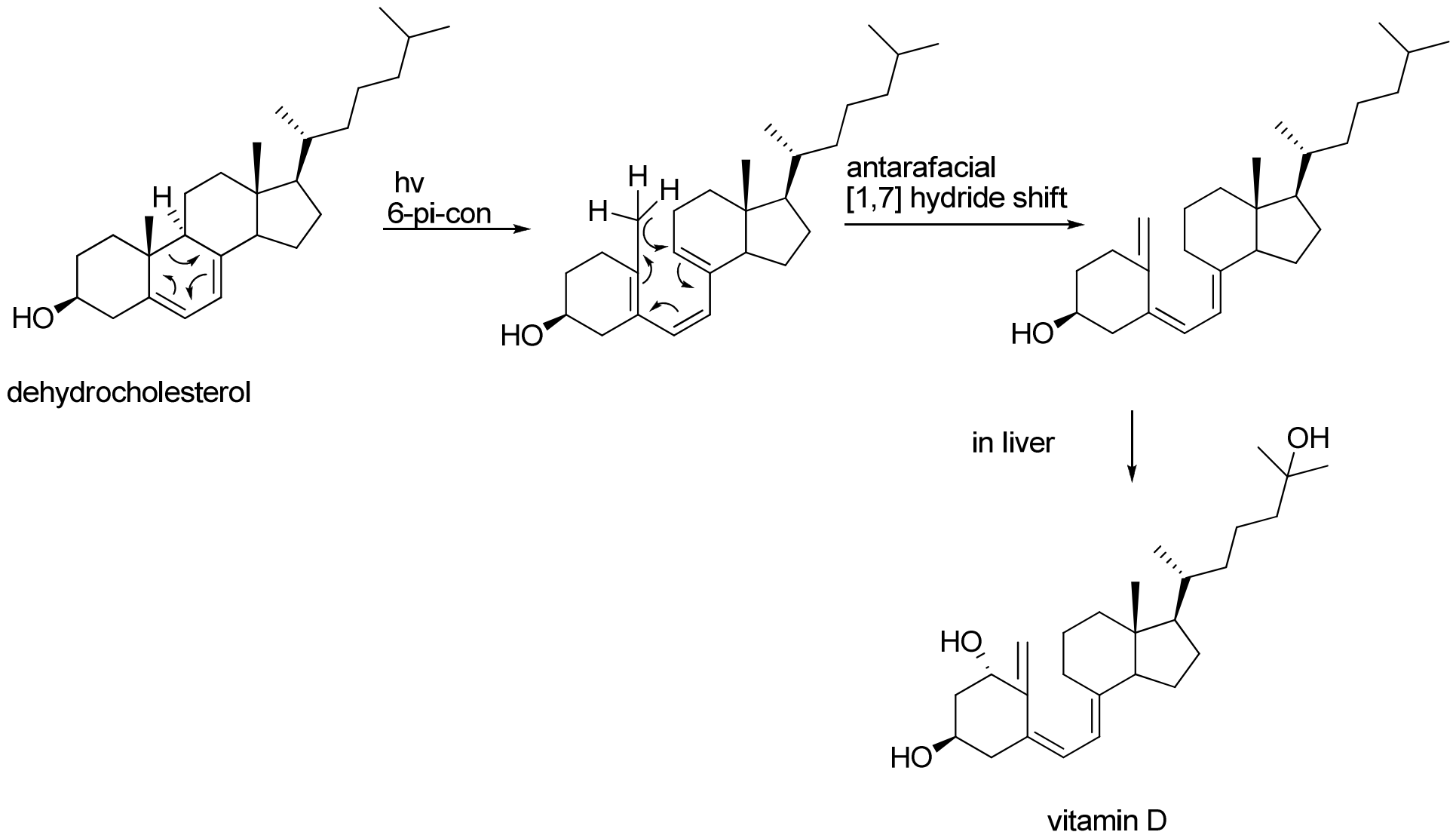


Cholesterol IS Bad For You

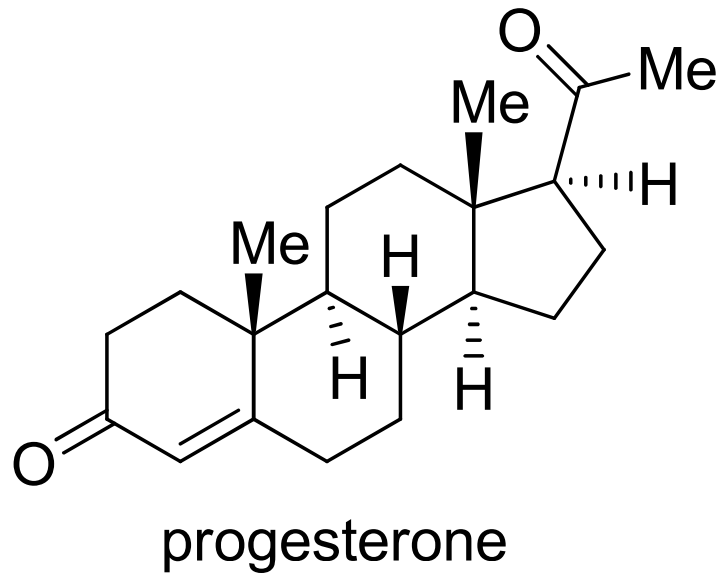


Wentworth, P.; Nieva, J.; Takeuchi, C.; Galve, D.; Wentworth, A. D.; Dilley, R. B.; DeLaria, G. A.; Saven, A.; Babior, B. M.; Janda, K. D.; Eschenmoser, A.; Lerner, R. A., *Science*, 302, **2003**, 1053

Health Reminder

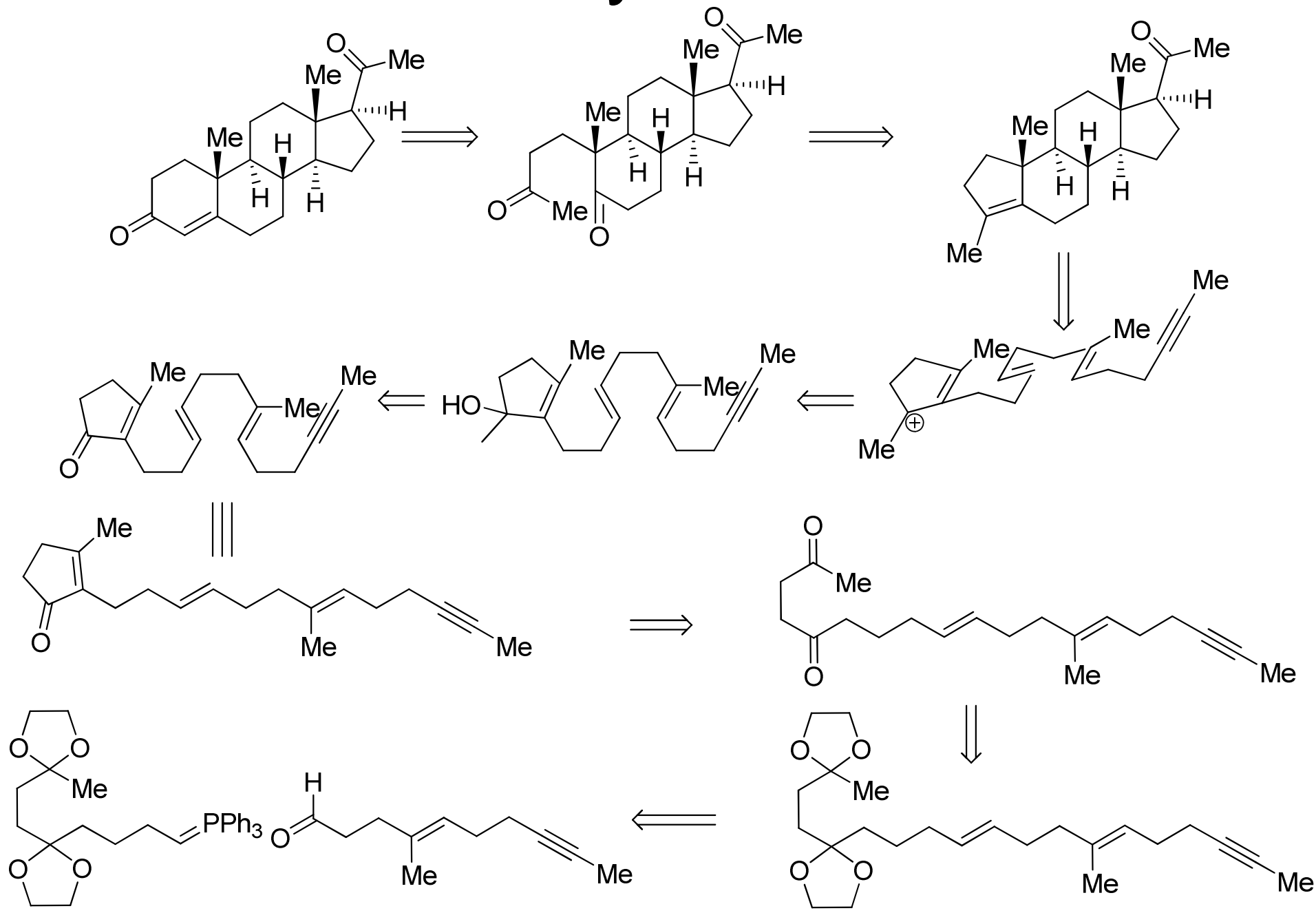


Progesterone

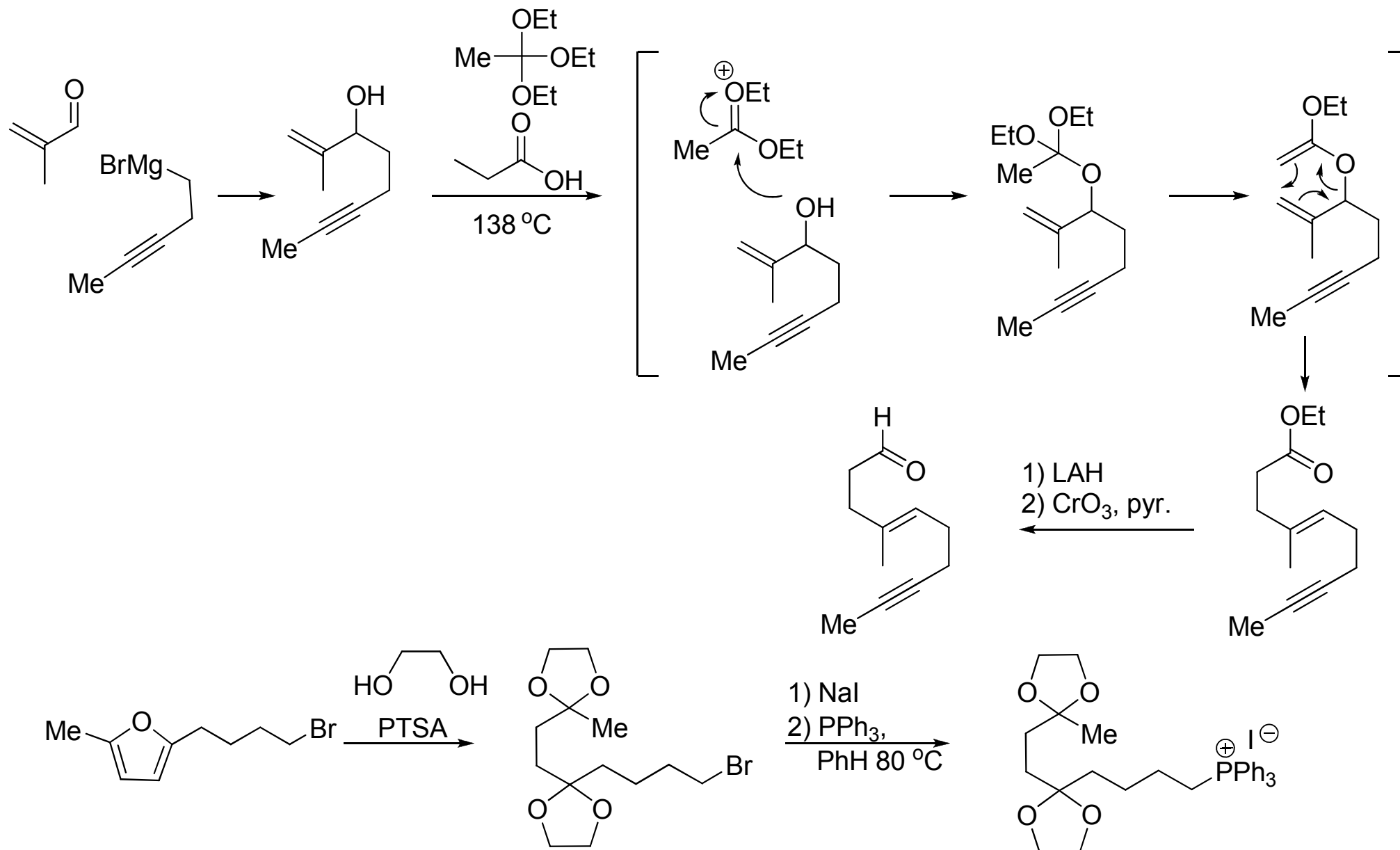


Involved in menstrual cycle and pregnancy
Made from Mexican yams

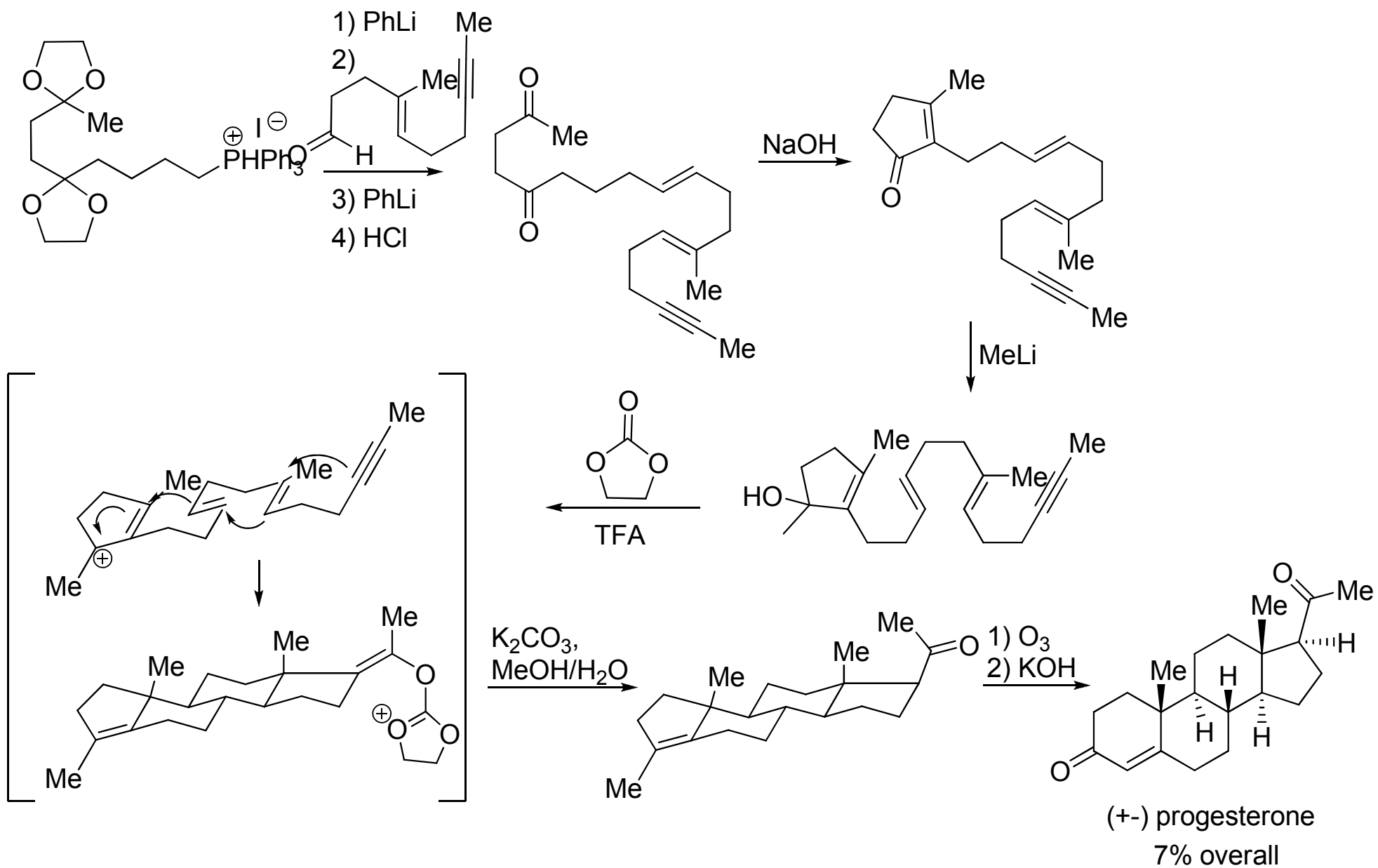
Retrosynthesis

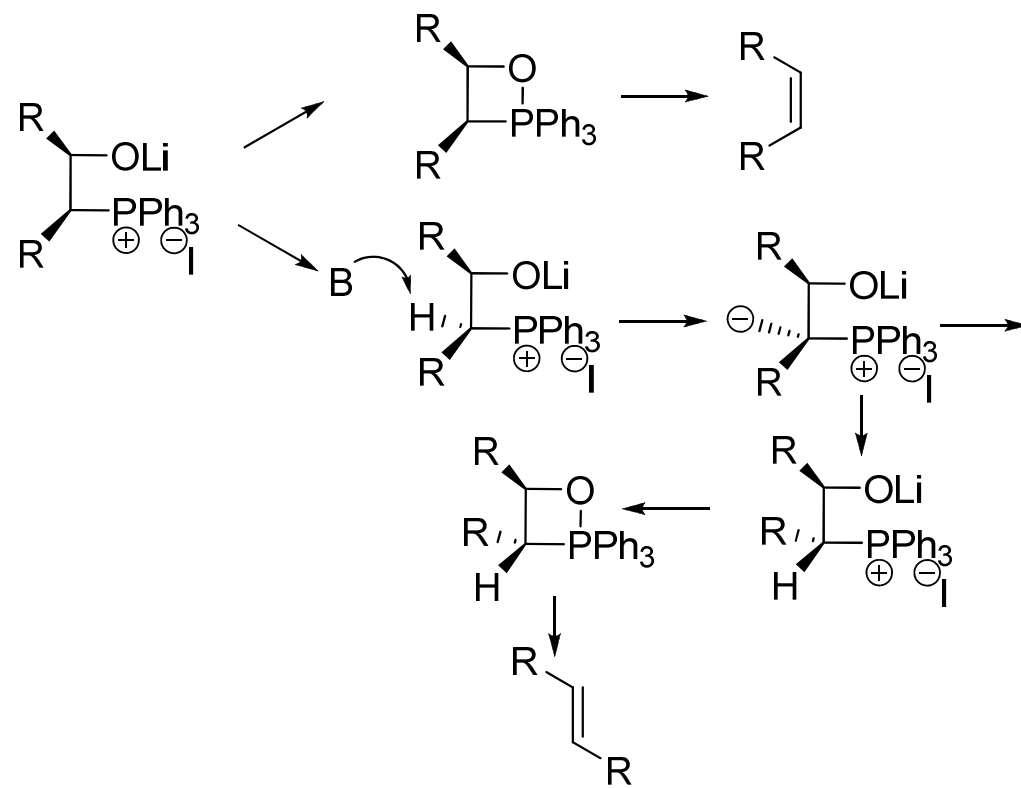


Synthesis of Wittig Precursors

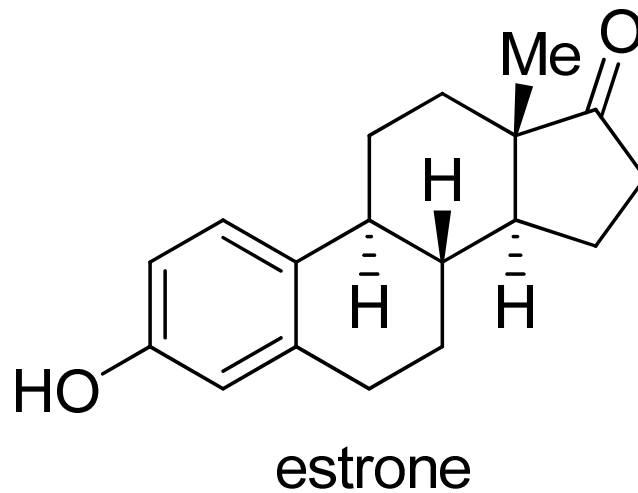


Finishing





Estrone

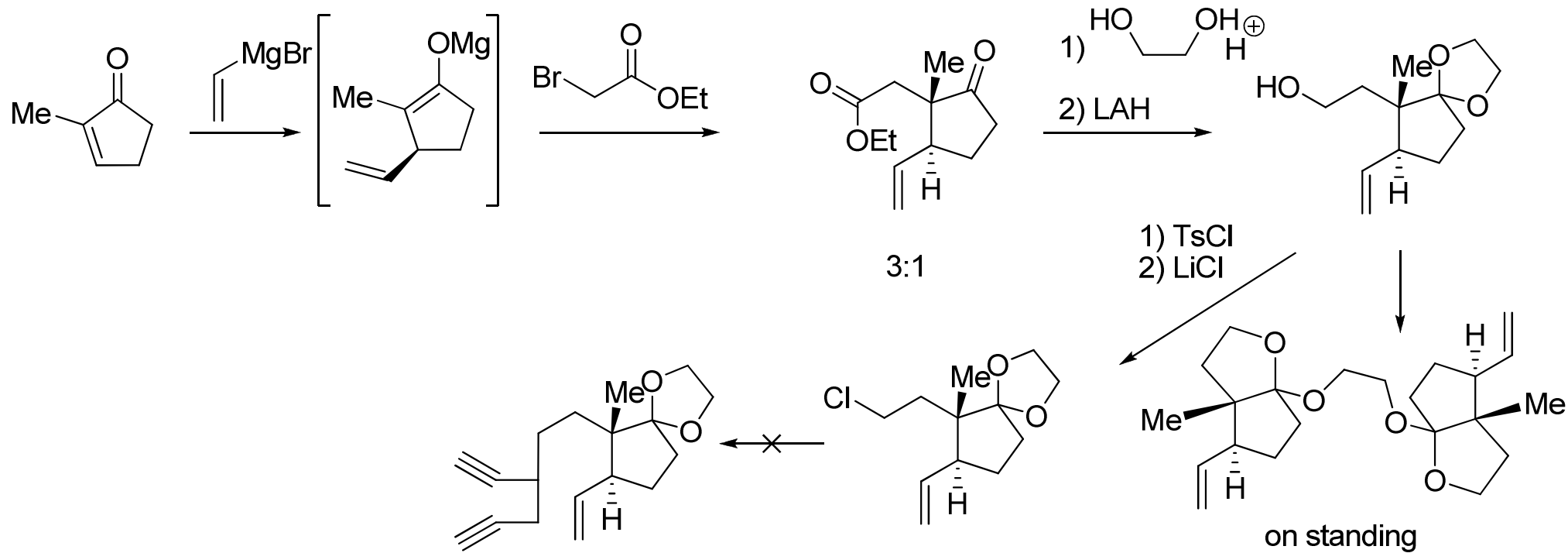


Least common estrogen

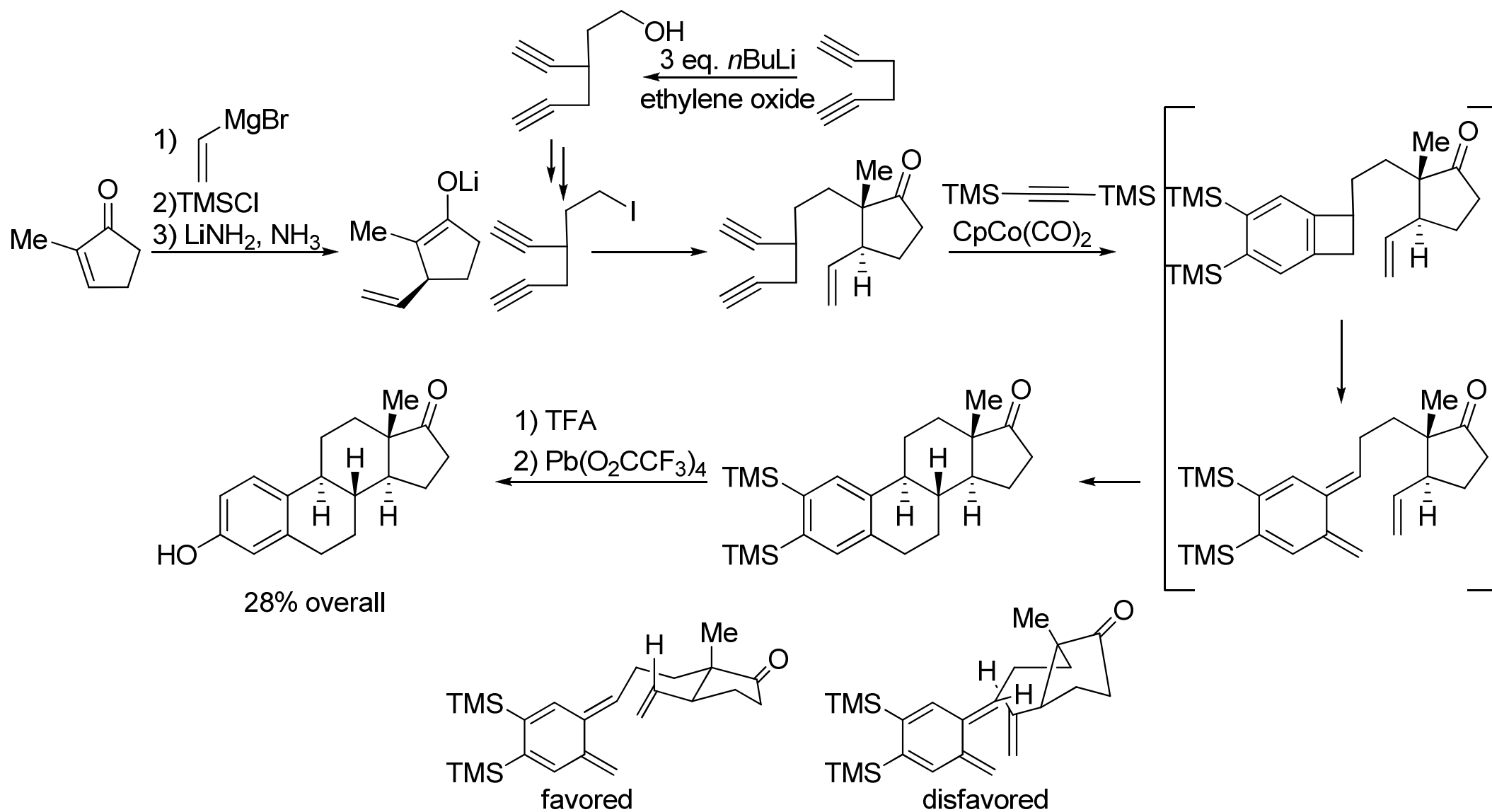
Only of the estrogens present in post-menopausal women

Biosynthesis involves “aromatase”

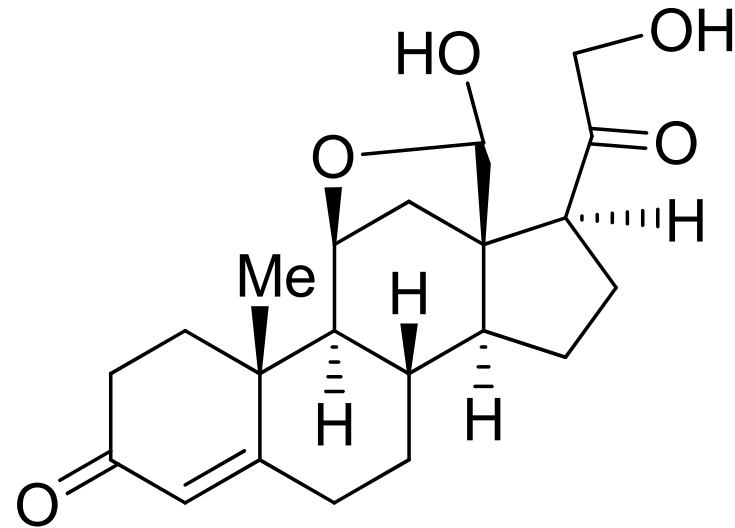
Failed Pathway



Productive Steps



Aldosterone



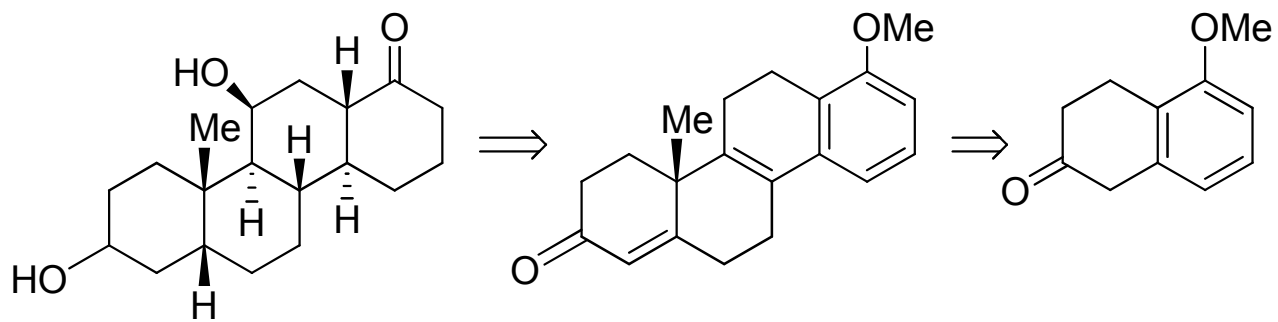
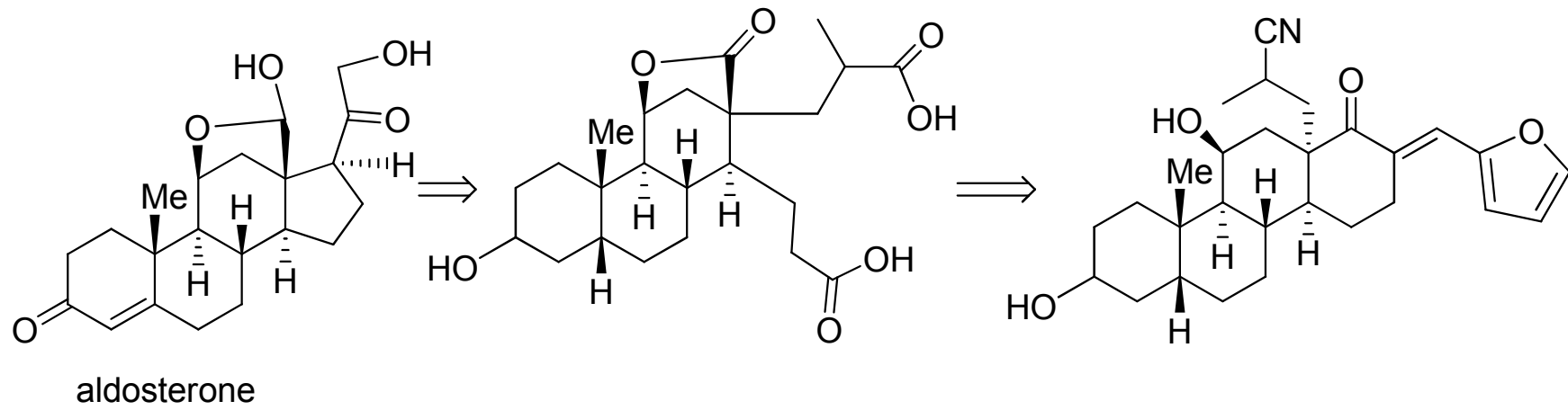
aldosterone

Increases reabsorption of sodium and water in the kidneys

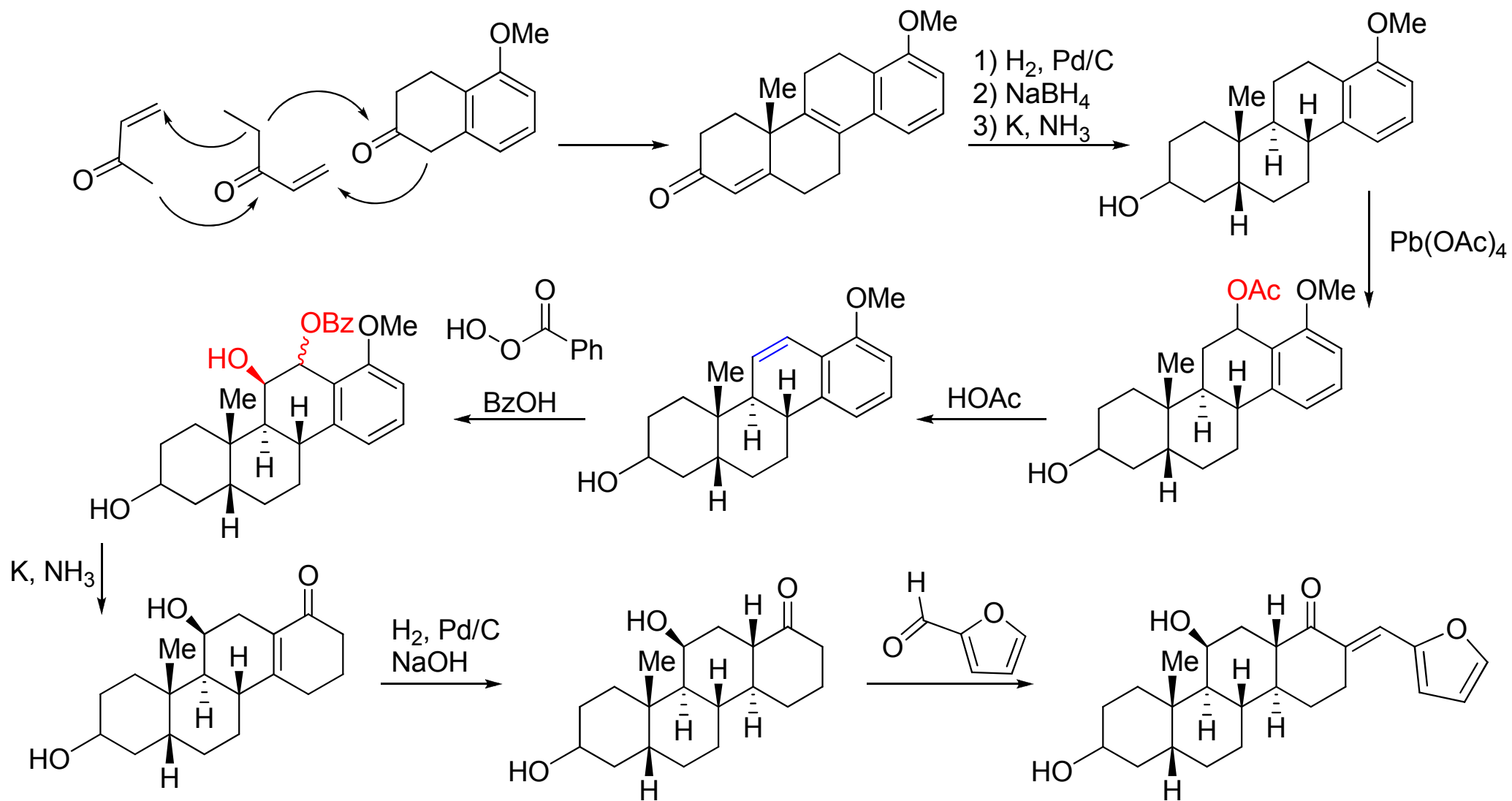
Increases blood pressure

Made by Skip Kropp

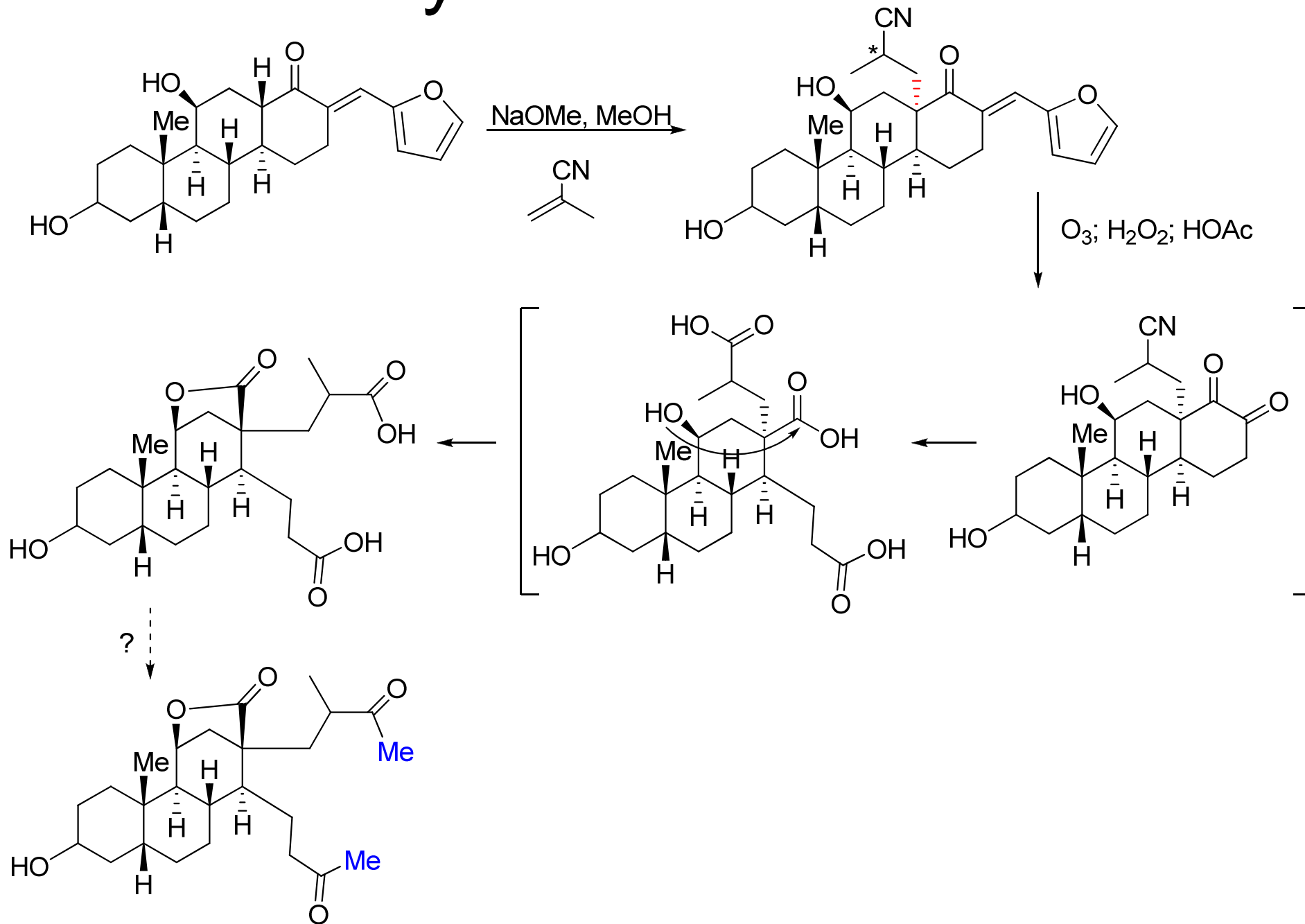
Retrosynthesis



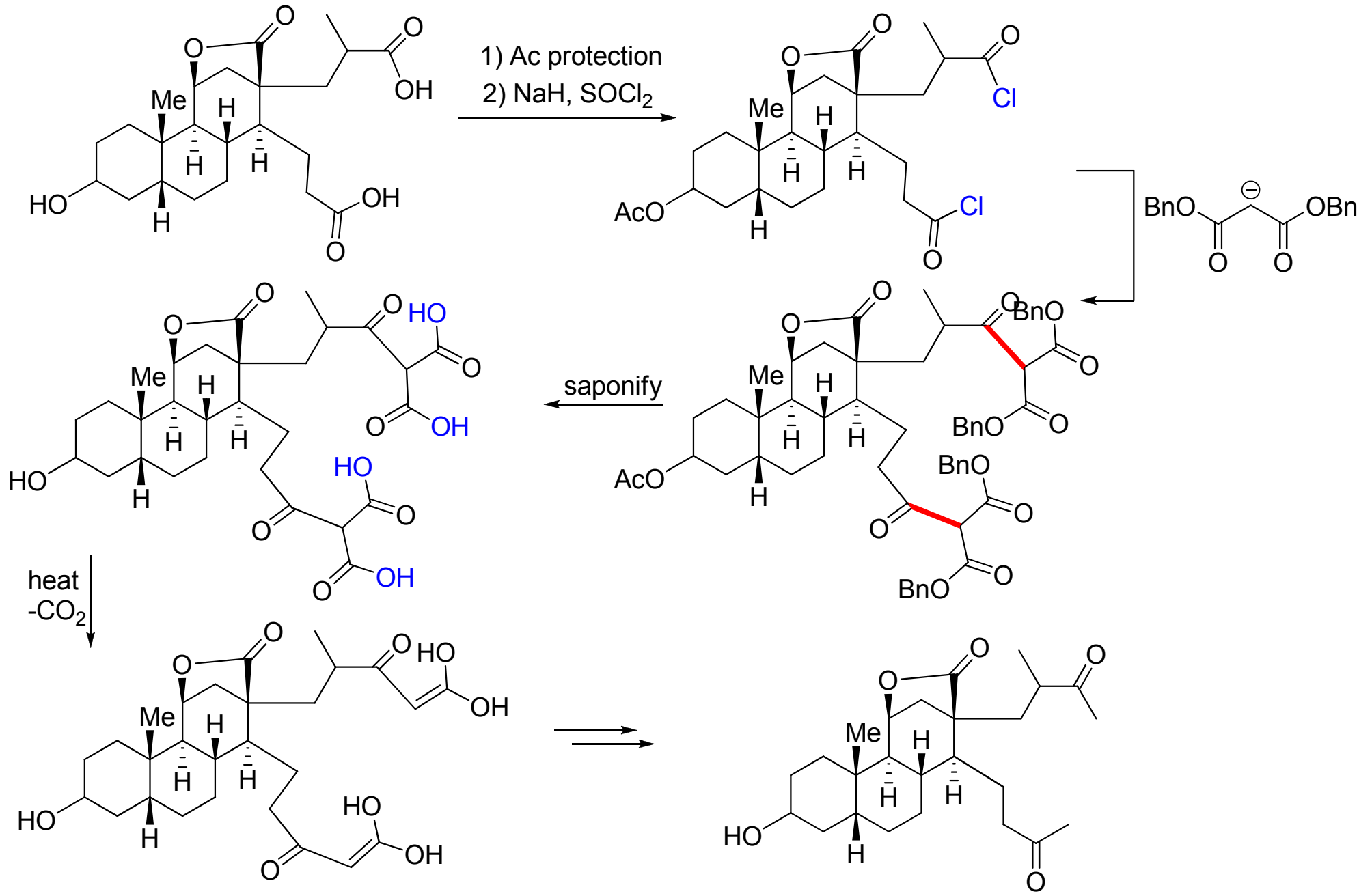
Robinson to Furfural



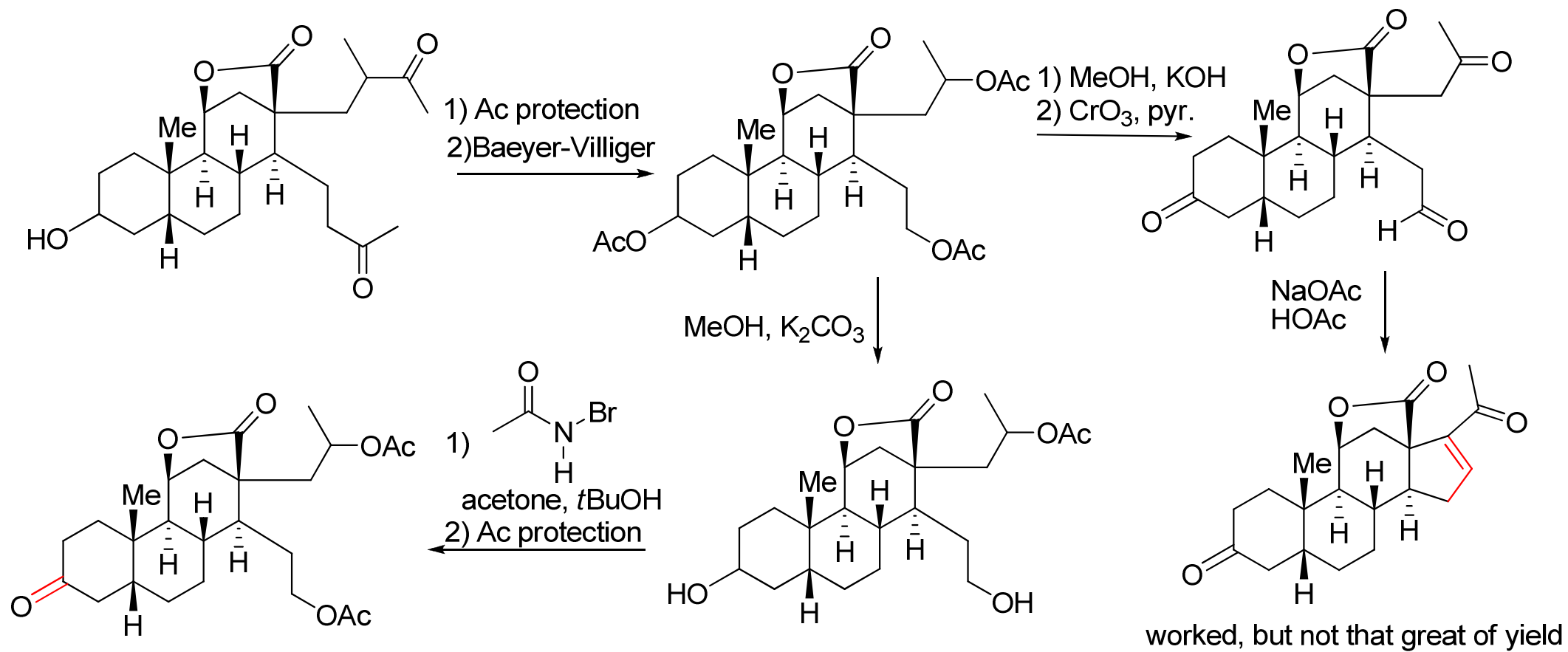
Synthesis of Diacid



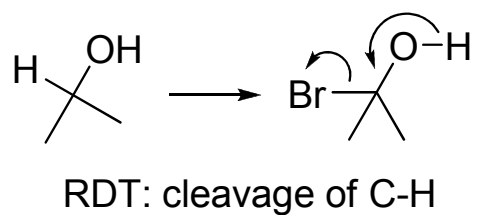
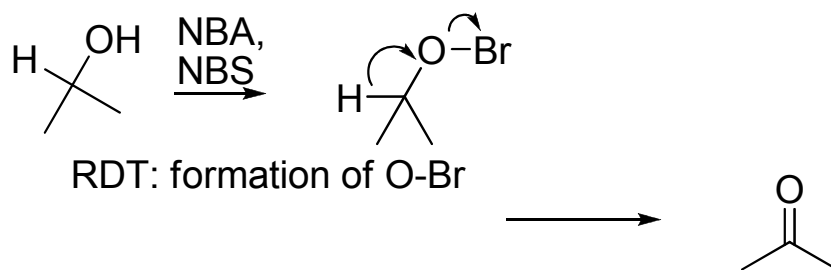
Old Time Chemistry



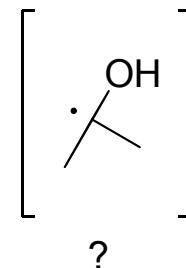
Unusual Oxidation



NBA Oxidation



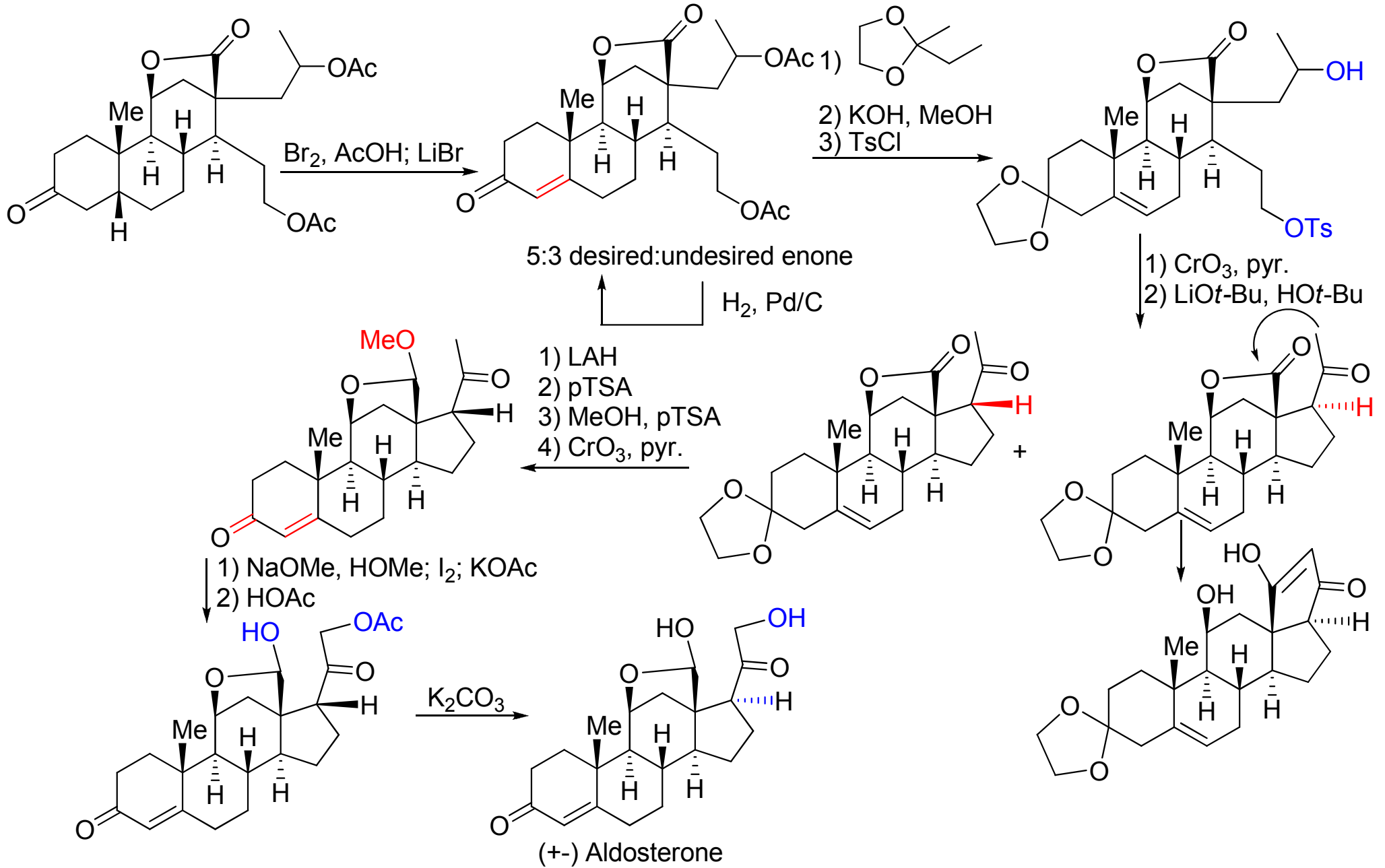
accelerants of oxidation:
light
aromatic rings



effects of sonication?

BDE kcal/mol
Me-H 105
Me₃-H 93

Closing



Conclusions

- Steroids are molecules, not pure evil
- The biosynthesis of steroids is quite incredible and involve easy to remember enzymes