

Reductions Via Electrons And Radicals

from chapter(s) _____ in the recommended text

A. Introduction

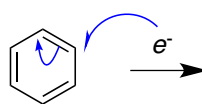
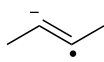
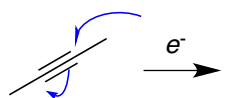
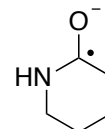
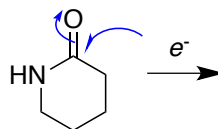
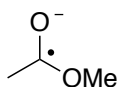
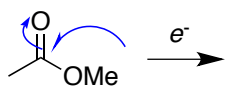
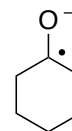
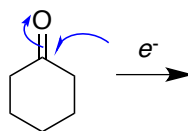
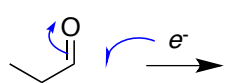
B. Reductions Via Free Electrons

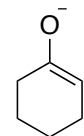
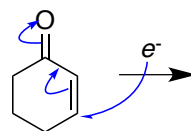
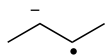
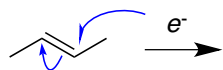
Addition Of One Electrons

a *radical anion*

proton orbited

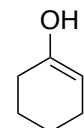
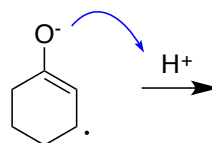
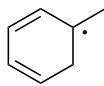
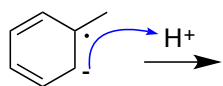
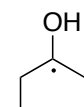
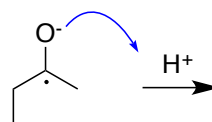
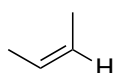
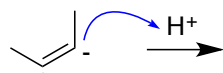
radical anion



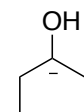
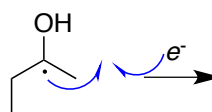
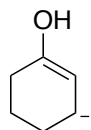
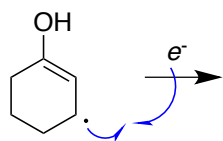


Addition Of One Electron Then Protonation

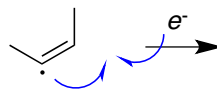
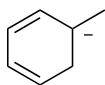
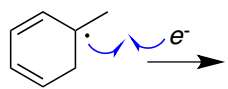
a radical



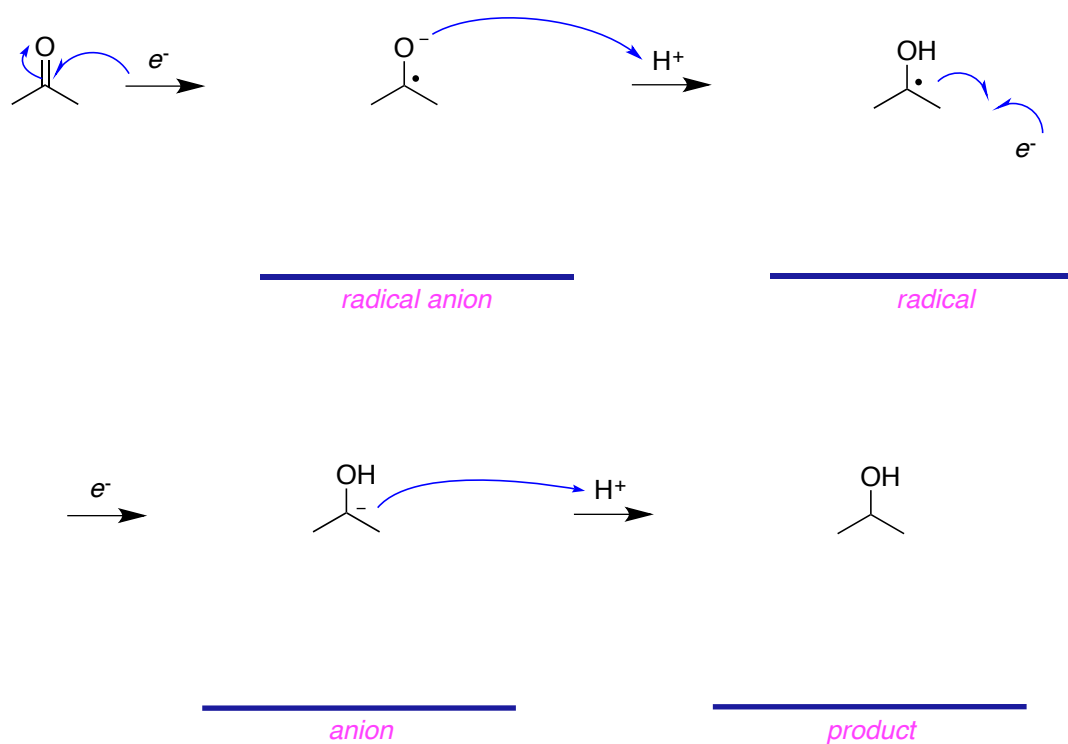
dianion
an anion



ANIONS LIKE THAT SHOWN ABOVE UNDERGO RAPID PROTON TRANSFER TO GIVE ALKOXIDES BEFORE PROTONATION

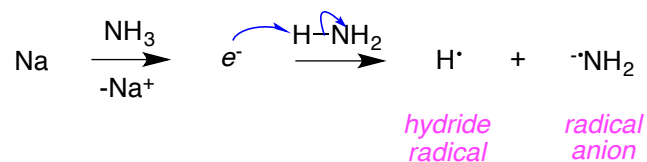


addition of two hydrogens.



ANIONS LIKE THAT SHOWN ABOVE WILL UNDERGO RAPID PROTON TRANSFER TO GIVE ALKOXIDES BEFORE PROTONATION

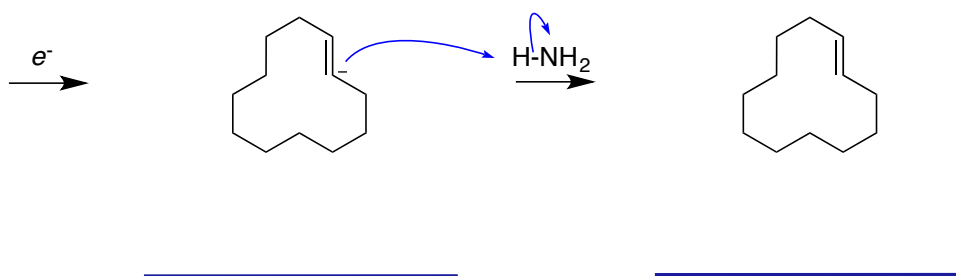
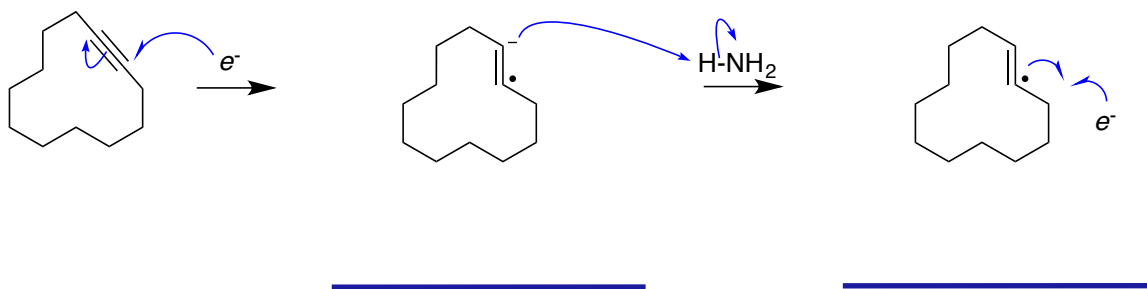
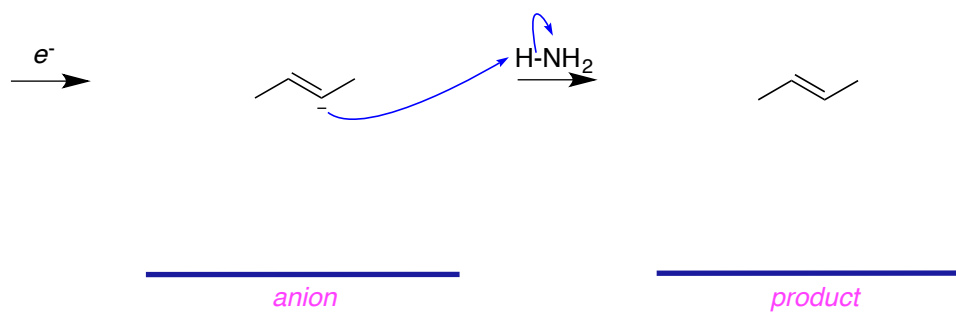
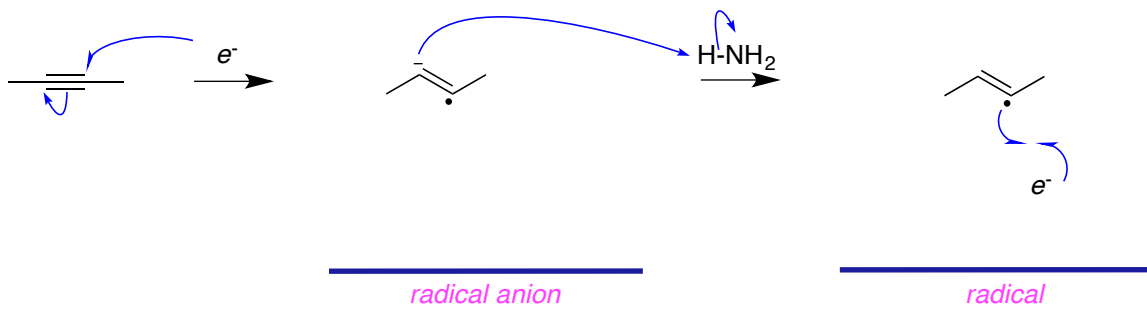
oxidize to Sm(3+)
sodium amalgam
inky-blue solution.



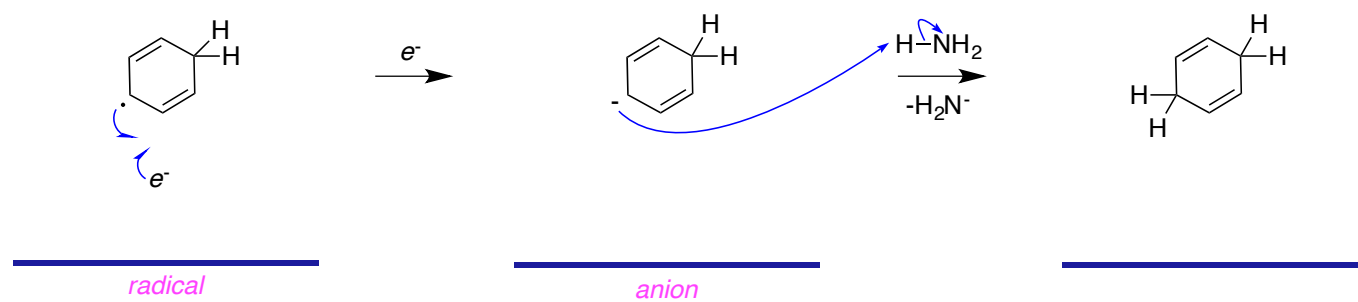
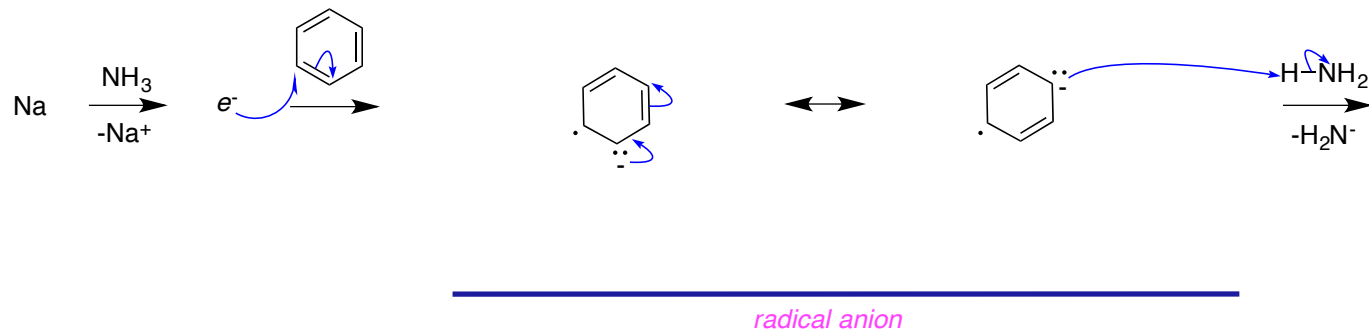
anion

Cycles Of Electron Addition Then Protonation

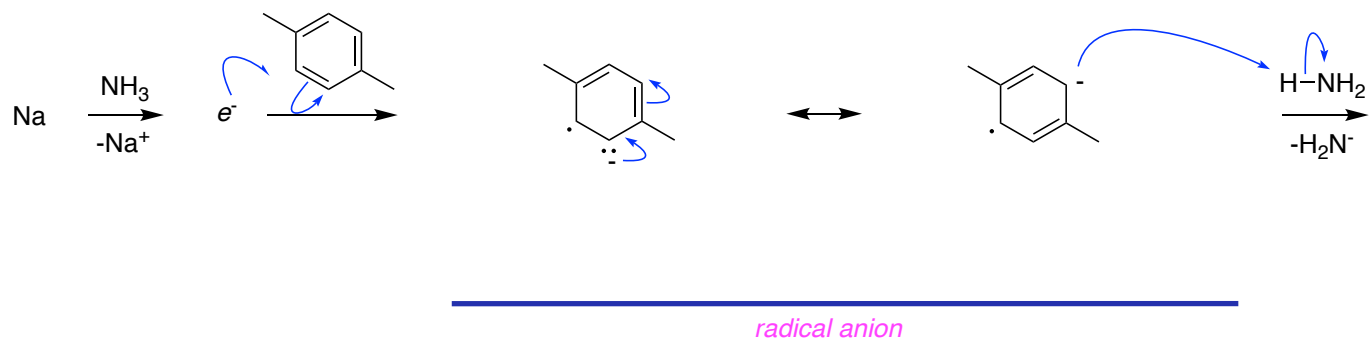
trans-geometry
equivalent to

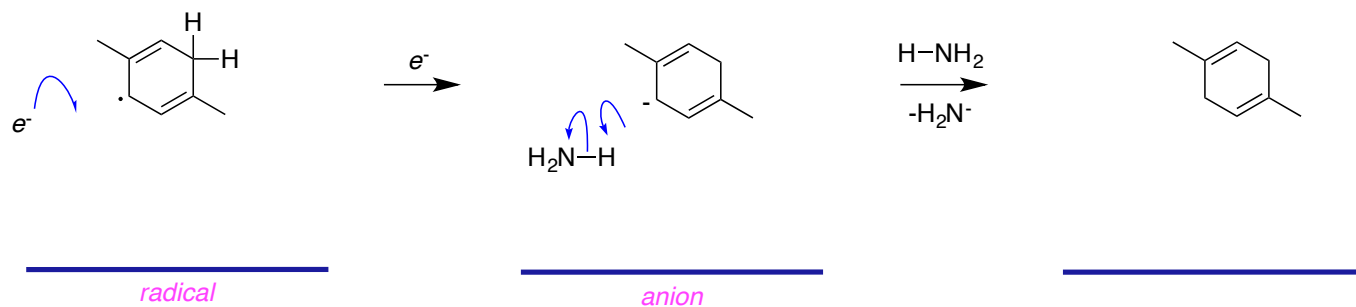


a *radical*, then another electron to form *an anion*
2



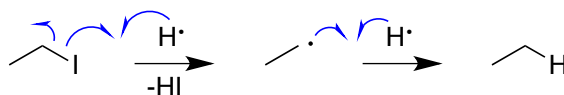
HOMO
non-conjugated





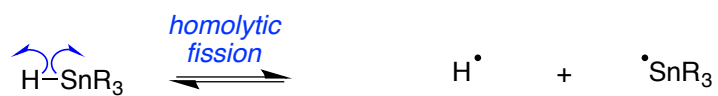
C. Reductions Via Radicals

reduction

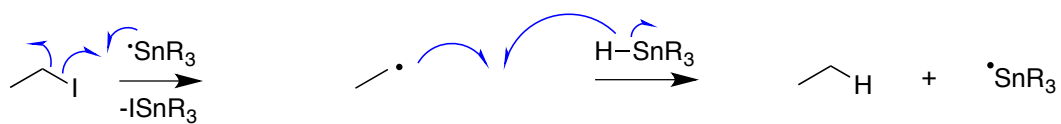


kinetic effects

Catalytic amounts



chain initiation



chain propagation

radical

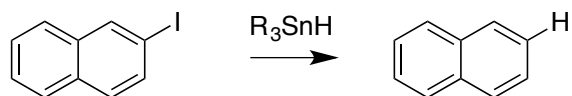
products

another tin radical.

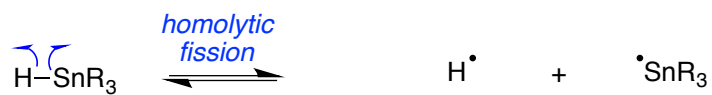
regenerated many times.

concentration is *low*.

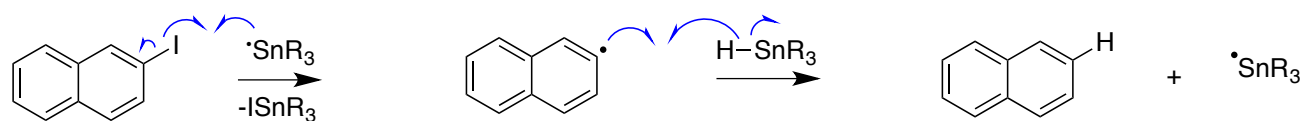




chain initiation



chain propagation



radical

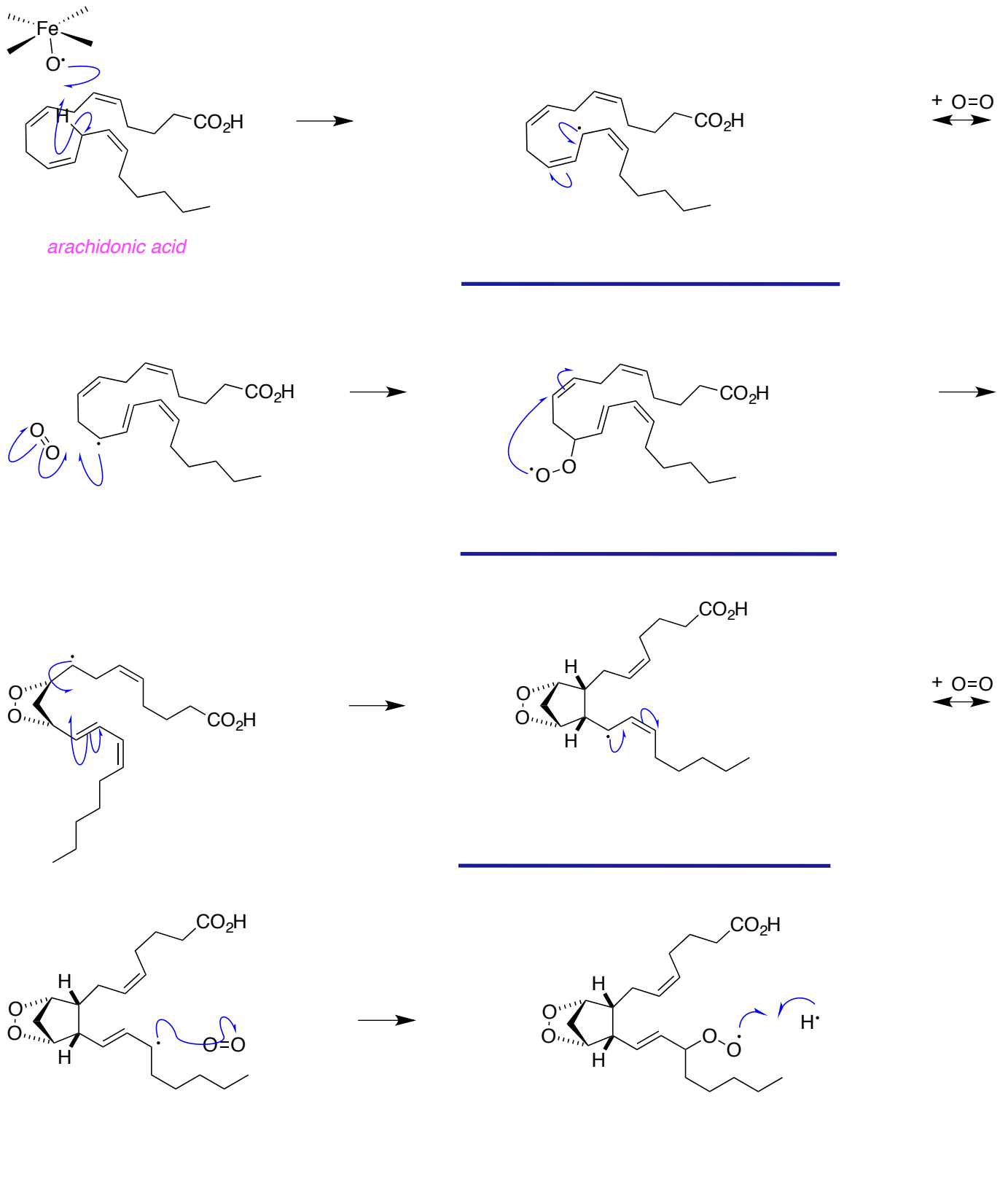
products

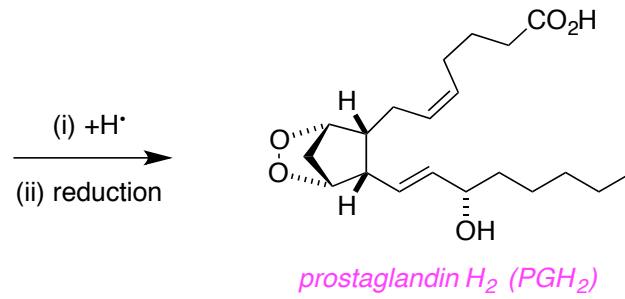
chain termination



would not change

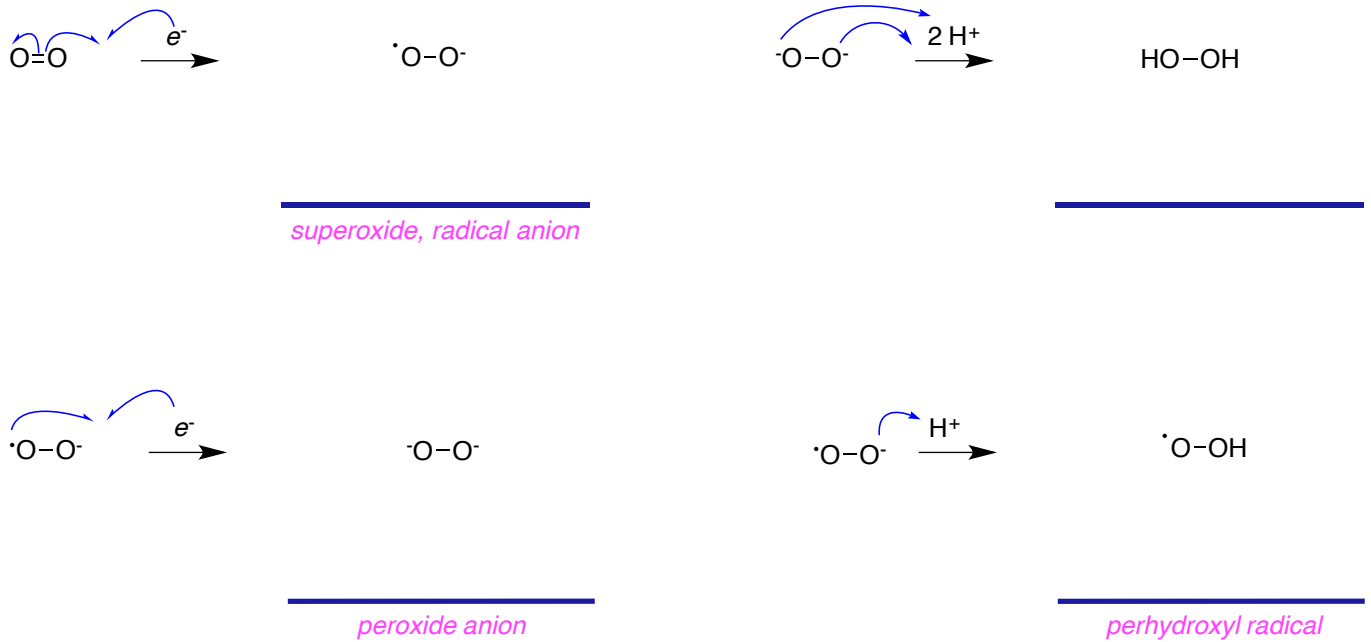
D. Biosynthesis Of Prostaglandin H₂ (PGH₂)





dilate blood vessels and are secreted in seminal fluid from the prostate gland

E. Reactive Oxygen Species



endoplasmic reticulum and mitochondria and peroxisomes