Conjugate Addition



A picture containing indoor, black, wooden, device

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A) Alkenes adjacent to a carbonyl are conjugated and are therefore electrophilic.

B) These species are called a,b unsaturated carbonyl compounds.

C) a,b unsaturated carbonyl compounds are conjugated, in that the pi electrons of the C=C and C=O bonds can delocalize over all four atoms. This lends some degree of extra stabilization to these species, because [pi electrons prefer to delocalize.](http://iverson.cm.utexas.edu/courses/310N/MainPagesSp06/GoldenRules.html)

D) Nucleophiles can, however, react at the b carbon atom in a process called conjugate addition.

E) Conjugate addition is favorable because the intermediate formed is a resonance stabilized enolate, thus relatively low energy.

