Objectives

After completing this section, you should be able to

1. write an equation to illustrate an intramolecular aldol reaction.
2. identify the product formed when a given dicarbonyl compound undergoes an intramolecular aldol condensation.
3. identify the dicarbonyl compound which, when treated with a suitable base, could be used to prepare a given cyclic enone by an intramolecular aldol condensation.

Study Notes

“Intramolecular” means “within the same molecule.” You have already seen some examples of intramolecular reactions in previous chapters. Another term for intramolecular aldol reaction is “internal aldol reaction.”

Intramolecular aldol reaction

Molecules which contain two carbonyl functionalities have the possibility of forming a ring through an intramolecular aldol reaction. In most cases two sets of \(\alpha\) hydrogens need to be considered. As with most ring forming reaction five and six membered rings are preferred (less ring strain).

As with other aldol reaction the addition of heat causes an aldol condensation to occur.
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