**β-Ketoacids are Easily Decarboxylated**

**Decarboxylation** is the loss of CO₂ from the carboxyl group of an acid. Most carboxylic acids are quite resistant to moderate heat. Exceptions are carboxylic acids that have a carbonyl group β to the carbonyl. These carboxylic acids are derived from Claisen condensations (following ester hydrolysis).

![Chemical structure and reaction](image-url)
Alkylation of $\beta$-Dicarboxylic Esters (Malonic Ester Synthesis)

Other synthetic plans take advantage of the ease at which decarboxylation occurs when a carbonyl group is in the $\beta$ position relative to the carboxylic acid. Here is a general synthetic route to carboxylic acids.
Alkylation of $\beta$-Ketoesters (Acetoacetic Ester Synthesis)

Here is a general synthetic route to methyl ketones.

The product of acetoacetic ester synthesis is a substituted acetone.