The Dieckmann condensation is the intramolecular chemical reaction of diesters with base to give β-ketoesters. It is named after the German chemist Walter Dieckmann (1869–1925). The equivalent intermolecular reaction is the Claisen condensation.

![Diagram of Dieckmann condensation reaction]

**Reaction Mechanism**

Deprotonation of an ester at the α-position generates an enolate ion which then undergoes a 5-exo-trig nucleophilic attack to give a cyclic enol. Protonation with a Bronsted-Lowry acid (H₃O⁺ for example) re-forms the β-keto ester.⁶

![Diagram of reaction mechanism]

Owing to the steric stability of five- and six-membered ring structures, these will preferentially be formed. So 1,6 diesters will form five-membered cyclic β-keto esters, while 1,7 diesters will form six-membered β-keto esters.⁷

**See also**

- Claisen condensation
- Gabriel-Colman rearrangement
References

1. Dieckmann, W. Ber. 1894, 27, 102 & 965
2. Dieckmann, W. Ber. 1900, 33, 595 & 2670

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