Crossed aldol reaction is a variation of aldol reaction.

**aldol reaction:**

![Aldol reaction mechanism](image)

**crossed aldol reaction:**

![Crossed aldol reaction mechanism](image)

**eg:**

![Example reaction](image)

**Mechanism:**

**Step 1:** The hydroxide ion deprotonates the enolizable aldehyde reversibly.

![Step 1](image)

**Step 2:** Enolate ion 1 preferentially adds to the non-enolizable aldehyde, which has the sterically less hindered and, therefore, more accessible carbonyl carbon.

![Step 2](image)

**Step 3:** Alkoxide ion 2 is protonated by water.

![Step 3](image)

See also crossed aldol condensation.

---

**Contributors**

- Gamini Gunawardena from the [OChemPal site](https://www.chempal.com) (Utah Valley University)