If the product of an addition reaction is unstable under the reaction conditions and undergoes an elimination reaction, the overall reaction is called an addition-elimination.

**Reactant 1 + Reactant 2**

**Addition**

Addition product (unstable under reaction conditions)

**Elimination**

Basic species in the system

Elimination product

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**Example:**

$$\text{ reactant 1 } + \text{ reactant 2 } \rightarrow \text{ addition product (unstable under reaction conditions) } \rightarrow \text{ elimination product}$$

**Mechanism:**

1. Initial reactants
2. Formation of the addition product
3. Elimination step
4. Final products
The first stage of the mechanism, shown in black, is an acid-catalyzed addition. The addition product, hemiaminal 1, is unstable under acidic conditions and undergoes a 1,2-elimination, shown in blue, via activation of the hydroxy group by the acid. Thus, the overall reaction is an addition-elimination.

Contributors

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