Investigations into the Reactivity of Trichlorocarbinols in the Jocic Reaction

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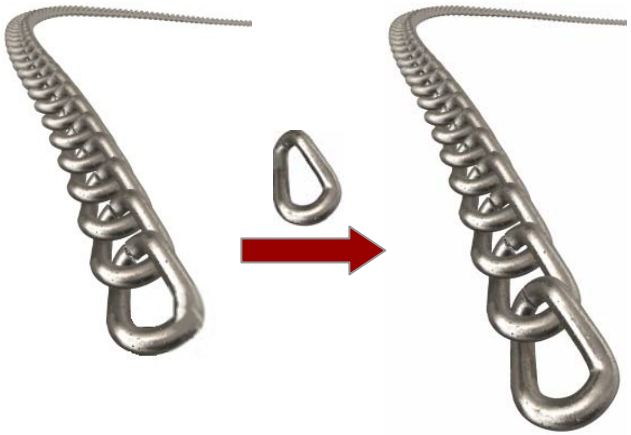
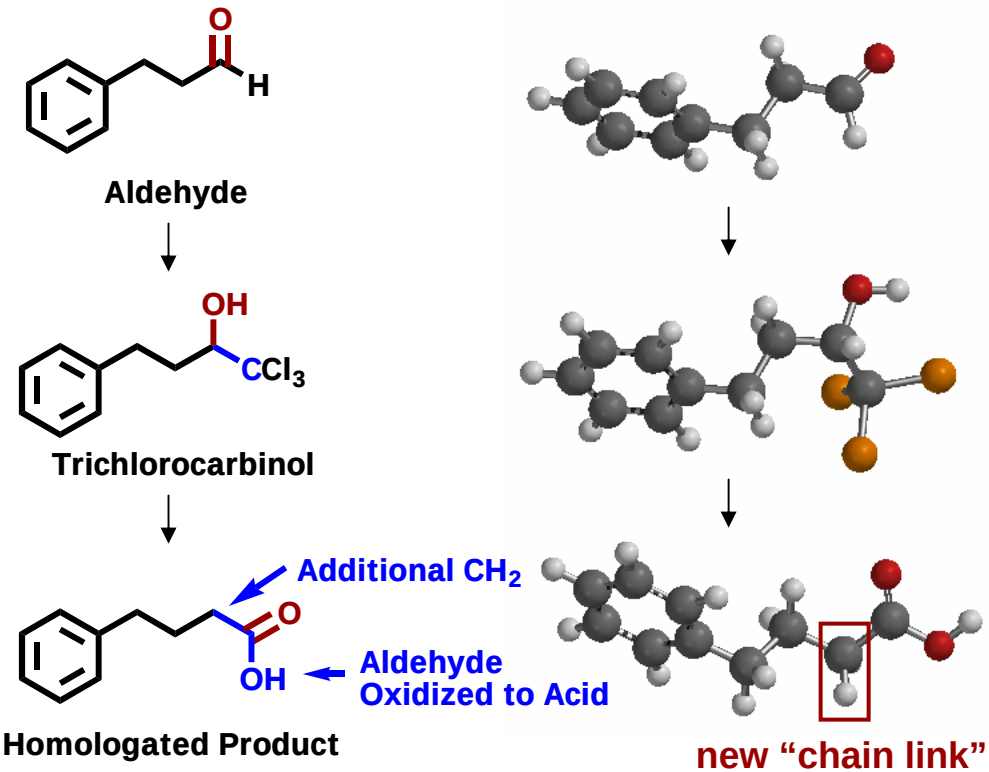


Safe and efficient methods for lengthening organic molecules by one carbon atom (one-carbon homologations) are tools valued by the organic chemist. Adding a link to a carbon chain provides access to thousands of structures that are not commercially available but that can expedite the preparation of pharmaceuticals, artificial biomolecules, materials, and other commodities. We have devised a superior method for one-carbon homologation based upon the reactivity of trichlorocarbinols in basic solutions. This novel approach offers numerous advantages over the few known procedures for the one-carbon oxidative homologation of aldehydes.

- ***Cost-effective:*** **employs inexpensive reagents and mild temperatures**
- ***Efficient:*** **oxidative homologation is accomplished in just two steps in excellent yields**
- ***Broad Scope:*** **applicable to all classes of aldehydes including sensitive asymmetric substrates and enals**
- ***Innocuous By-products:*** **much safer and more environmentally friendly than alternative methods**
- ***Versatile:*** **reliable for selective monodeuteration (radiolabeling) of organic molecules**



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