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Simple and Selective Method for Aldehydes (RCHO) $\rightarrow(E)$-Haloalkenes (RCH:CHX) Conversion by means of a HaloformChromous Chloride System
J. Am. Chem. Soc. 1986, 108, 7408-7410.

## The Takai Olefination: Simple Access to E-Alkenyl Halides



Selected examples:


87\% yield
$E / Z=94: 6$

$76 \%$ yield
$E / Z=94: 6$

$78 \%$ yield
$E / Z=89: 11$


55\% yield
$E / Z=89: 11$


55\% yield
$E / Z=92: 8$

$73 \%$ yield
$E / Z=81: 19$

$75 \%$ yield

$51 \%$ yield
Competition experiments:




Significance: In 1986 Takai and co-workers developed a simple procedure for the stereoselective preparation of $E$-alkenyl halides from various aldehydes by using an excess of $\mathrm{CrCl}_{2}$ together with a haloform. The selectivity was dependent on the corresponding haloform and decreased in the order $\mathrm{Cl}>\mathrm{Br}>\mathrm{I}$.

Comment: The mild reaction conditions enable highly chemoselective transformations. Thus, the olefination of an aldehyde proceeds smoothly in the presence of ketone moieties. Given the unique chemo- and stereoselectivity, several modifications and improvements of this method have been published over the years.

