Stereoselective Synthesis of All-Carbon Tetrasubstituted Alkenes

**Significance:** The stereoselective synthesis of various all-carbon tetrasubstituted alkenes is disclosed, employing a two-step protocol which includes the stereoselective generation of an alkenyl pseudohalide followed by stereospecific palladium-catalyzed cross-coupling. The appropriate tetrasubstituted alkenes are obtained in good yield and with good diastereomeric ratios, providing mainly the Z-isomers.

**Comment:** The reaction is proposed to proceed via a ketene intermediate which is stereospecifically attacked by a lithium organyl to form the tri-substituted enolate moiety attached to a pseudohalide group \([\text{OTf} \text{ or } \text{OP}(\text{OR})_2]\). This moiety may be converted into other functional groups by palladium-catalyzed cross-couplings to give the corresponding all-carbon tetrasubstituted alkenes.