**anti**-Carbobismuthination of Alkenes

\[
\text{BiBr}_3 + \text{alkyne} + \text{BiBr}_3 \xrightarrow{\text{CH}_2\text{Cl}_2, 25 \, ^\circ\text{C}, 2 \, \text{h}} \text{alkenylbismuth dibromide}
\]

**Significance:** The first carbobismuthination of alkynes has been accomplished by the reaction of an alkyne, BiBr₃, and a ketene silyl acetal to produce an alkenylbismuth compound with high stereo- and regioselectivity. The Br₂Bi group in the alkenylbismuth compounds can be substituted by I, Ts and SPh groups, and palladium-catalyzed cross-couplings with acid chlorides have been performed successfully.

**Comment:** The reaction of BiBr₃ with a phenylacetylene derivative and a ketene silyl acetal gives monoalkenylibismuth dibromide as a white solid. X-ray crystallographic analysis of this product reveals that the carbobismuthination takes place regio- and stereoselectively in an anti-addition manner.

**Selected examples:**
1. \(\text{OMe} \quad \text{I} \quad \text{t-Bu} \quad \text{99% yield}\)
2. \(\text{OMe} \quad \text{Cl} \quad \text{92% yield}\)
3. \(\text{OMe} \quad \text{PhS} \quad \text{66% yield}\)
4. \(\text{OMe} \quad \text{i-Pr} \quad \text{84% yield}\)

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