Palladium-Catalyzed Carbofluoroalkylation

**Significance:** The authors describe a palladium-catalyzed three-component reaction involving terminal alkynes, boronic acids, and perfluoroalkyl iodides, leading to the desired products in a highly regio- and stereocontrolled manner.

**Comment:** From a mechanistic point of view, the simultaneous addition of both aryl and $C_{n}F_{m}$ groups across the triple bond in a radical-mediated process is proposed.

**Equation:**

\[
R^1_- + R^2-B(OH)_2 + R^3-I \xrightarrow{\text{PdCl}_2(PPPh_3)_2 (4 \text{ mol\%})} \xrightarrow{\text{K}_2\text{CO}_3 (2.0 \text{ equiv})} \xrightarrow{\text{CH}_2\text{Cl}_2-H_2O, 50^\circ C, 12 \text{ h}} \frac{R^2}{R^1} \xrightarrow{\text{R}^3-H^3}
\]

**Selected examples:**

- **75% yield**
- **79% yield**
- **78% yield**
- **81% yield**
- **70% yield**
- **83% yield**