Palladium-Catalyzed Conversion of Aryl Triflates to Aryl Fluorides

**Significance:** The biaryl phosphine ligand t-Bu-BrettPhos in combination with [cinnamyl]PdCl₂ is shown to catalyze the fluorination of aromatic and heteroaromatic triflates using CsF as fluorine source. This reaction proceeds under relatively mild conditions and with high functional group tolerance.

**Comment:** In a few cases, regioisomeric products are observed, but the overall yields remain high. The success of the reaction crucially depends on the sterically demanding t-BuBrettPhos ligand, since it prevents the formation of dimeric [LPdAr(F)]₂, but also promotes reductive elimination of the Ar–F bond due to its large size. This method can be expected to be applicable for the preparation of biologically active aryl fluorides.

Selected examples:

- **110 °C, 83% yield**
  - BuO₂C
  - 10 mmol scale

- **80 °C, 85% yield**
  - PhMe, 80–130 °C, 12 h

- **130 °C, 84% yield**
  - 85% yield

- **110 °C, 73% yield**

- **110 °C, 80% yield**

- **80 °C, 83% yield**

- **110 °C, 73% yield**

- **130 °C, 57% yield**

**Schema:**

R₂OTf + CsF → R₂ArF

R = Alk, Ar, ketones, esters, amines, ethers, nitro up to 85% yield