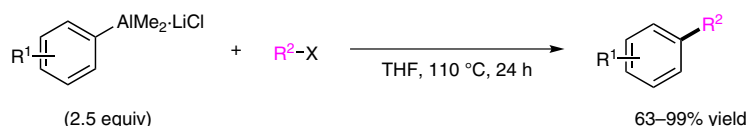


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Organoaluminum-Mediated Direct Cross-Coupling Reactions

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# Direct Cross-Coupling of Organoaluminum Reagents

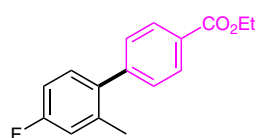


R<sup>1</sup> = Me, F, NMe<sub>2</sub>, OEt, CH<sub>2</sub>OEt

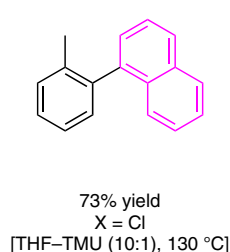
R<sup>2</sup> = Ar, alkenyl, alkynyl

X = I, Br, Cl

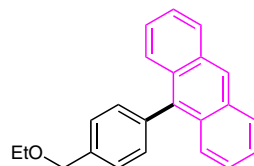
## Selected examples:



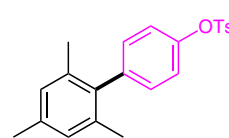
91% yield  
X = Br



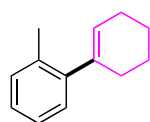
73% yield  
X = Cl  
[THF-TMU (10:1), 130 °C]



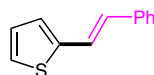
95% yield  
X = Br



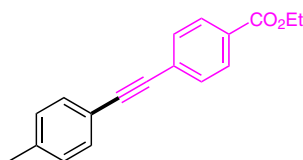
97% yield  
X = Br



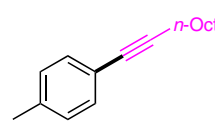
76% yield  
X = I



63% yield  
X = I



68% yield  
X = Cl



76% yield  
X = Cl

**Significance:** The authors report a direct cross-coupling of arylaluminum reagents and organic halides without an external catalyst. As the steric and electronic properties of functional groups on the aromatic ring had little influence of the reactivity, a variety of coupling products were obtained in high yields.

**Comment:** Interestingly, the reactions of aromatic iodides or bromides bearing a tosylate, triflate, or carbamate group did show high chemoselectivity, as the coupling only took place at the halide. Additionally, an ICP-MS analysis was performed to exclude traces of transition metals (level of 1 ppb).

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Metal-Mediated  
Synthesis

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aluminum

cross-coupling

C–C bond formation

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of the month