Category

Metal-Mediated Synthesis

Key Words

aryl iodides
organocopper
carboxylation

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Carboxylation and Esterification of Functionalized Arylcopper Reagents
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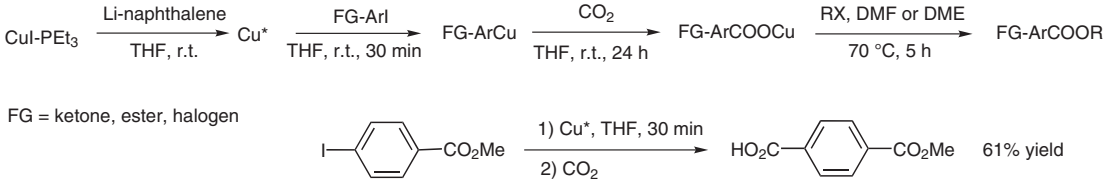

Significance: The synthesis of substituted benzoate esters from aryl iodides was performed using the insertion of active copper metal, generated from CuI-PEt_3 complex and lithium naphthalenide, followed by the carboxylation with CO_2. The method allows preparing a number of aryl benzoates, bearing functional groups which are not compatible with standard organomagnesium chemistry.

Comment: Insertion of copper is a very mild method for the formation of organometallic species from aryl iodides, since it is compatible with practically any functionality. A certain drawback of arylcopper species is a lack of reactivity toward electrophiles. The given method of acid and ester formation from arylcopper by the carboxylation–alkylation sequence is preferable, giving higher yields than the conventional reaction with chloroformates.

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