J. T. REEVES,* C. A. MALAPIT, F. G. BUONO, K. P. SIDHU, M. A. MARSINI, C. A. SADER,
K. R. FANDRICK, C. A. BUSACCA, C. H. SENANAYAKE (BOEHRINGER INGELHEIM

PHARMACEUTICALS, RIDGEFIELD, AND THE UNIVERSITY OF CONNECTICUT, STORRS, USA)
Transnitrilation from Dimethylmalononitrile to Aryl Grignard and Lithium Reagents: A Practical Method for Aryl Nitrile Synthesis
J. Am. Chem. Soc. 2015, 137, 9481-9488.

## Transnitrilation of Grignard Reagents and Aryllithiums

Category
Metal-Mediated Synthesis

Key words
nitriles
Grignard reagents
lithium

$\mathrm{R}=\mathrm{Alk}, \mathrm{OMe}, \mathrm{OBn}, \mathrm{Ph}, \mathrm{F}, \mathrm{Cl}, \mathrm{Br}, \mathrm{NMe}_{2}, \mathrm{SMe}$, $\mathrm{CF}_{3}, \mathrm{CO}_{2} \mathrm{H}, \mathrm{C}(\mathrm{O}) \mathrm{Ni}-\mathrm{Pr}_{2}$, pyrazolyl
via


Selected examples:

94\% yield

$73 \%$ yield

$93 \%$ yield

$73 \%$ yield

$77 \%$ yield


91\% yield


52\% yield


72\% yield

Significance: The authors report an electrophilic cyanation of various arylmagnesium and -lithium reagents by using dimethylmalononitrile as a reagent. The transition-metal-free method proceeds under mild reaction conditions and affords the desired nitriles in high yields.

Comment: The Grignard reagents were either obtained from commercial sources or prepared in situ from the corresponding aryl iodides or bromides. Aryllithium reagents were prepared either by bromine-lithium exchange or by directed ortho lithiation.

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[^0]:    synfacts Contributors: Paul Knochel, Diana Haas
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