

I. M. YONOVA, A. G. JOHNSON, C. A. OSBORNE, C. E. MOORE, N. S. MORRISSETTE, E. R. JARVO\* (UNIVERSITY OF CALIFORNIA, IRVINE AND UNIVERSITY OF CALIFORNIA, SAN DIEGO, USA)

Stereospecific Nickel-Catalyzed Cross-Coupling Reactions of Alkyl Grignard Reagents and Identification of Selective Anti-Breast-Cancer Agents

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## Stereospecific Kumada Cross-Coupling of Alkyl and Aryl Grignards

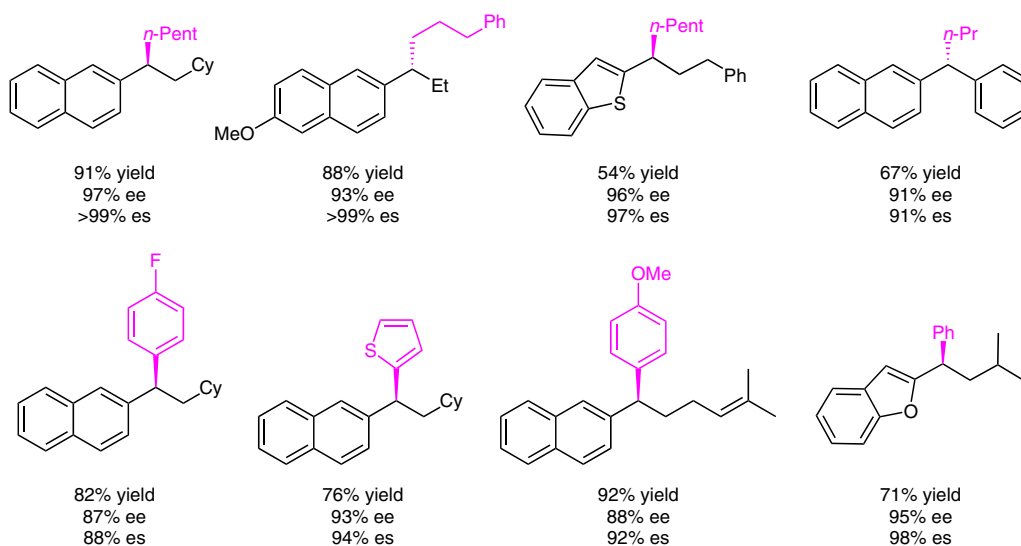


Ar = Naph, 6-MeONaph, benzothiophenyl, benzofuranyl

R<sup>1</sup> = Et, *i*-Bu, CH<sub>2</sub>Cy, Bn, CH<sub>2</sub>Bn, (CH<sub>2</sub>)<sub>2</sub>CHCMe<sub>2</sub>

R<sup>2</sup> = various Alk, Ar

### Selected examples:



**Significance:** Herein, the authors report an efficient nickel-catalyzed cross-coupling reaction of long-chain alkyl and various aryl Grignards with benzylic ethers providing the corresponding products with high enantiospecificity. Furthermore, applying this reaction protocol, compounds that show promising inhibition of breast cancer cell proliferation could be prepared.

**Comment:** Decreasing the reaction concentration raised the efficiency of the transformation and less elimination byproduct was generated. Also, the use of more than two equivalents of Grignard reagent was disadvantageous for the reaction.

**SYNFACTS Contributors:** Paul Knochel, Diana Haas  
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Category

Metal-Mediated  
Synthesis

Key words

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Kumada coupling  
nickel

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*of the month*