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### Diastereoselective Synthesis of a Hydroazulene Derivative by Tandem Michael-Wittig Reactions

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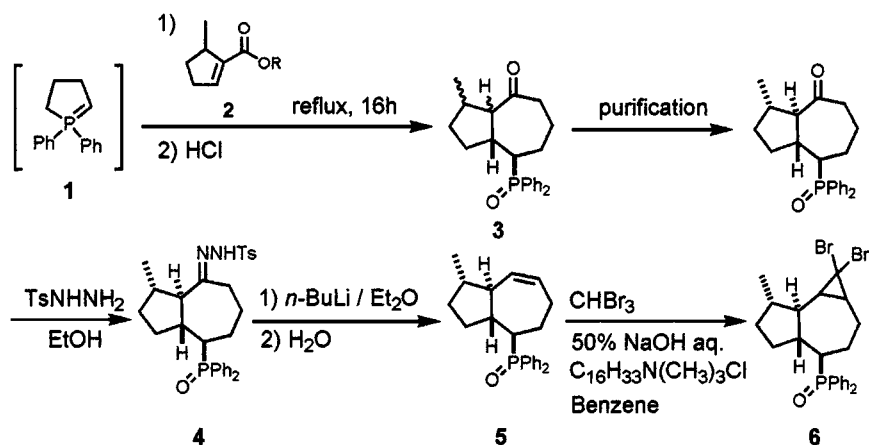
## DIASTEREOSELECTIVE SYNTHESIS OF A HYDROAZULENE DERIVATIVE BY TANDEM MICHAEL-WITTIG REACTIONS

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*The reaction of a cyclic phosphonium ylide [1] with enoate 2 gives a hydroazulene derivative with stereoselectivity.*

The reaction of phosphonium ylide [1] generated by use of *t*-BuOK as a base with ethyl ester 2 (R=Et) was attempted. After the hydrolysis of the crude product, the hydroazulene derivative 3 was obtained in 40% yield as a mixture of stereoisomers. The proportion of the stereoisomers was determined to be 65: 16: 14: 5 by <sup>31</sup>P NMR analysis. Moreover,



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the reaction of [1] with *t*-butyl ester **2**(R=*t*-Bu) was carried out under the same reaction conditions. Consequently, the desired hydroazulene derivative **3** was obtained in 60% yield with similar stereoselectivity.

A pure isomer among ketone **3** was converted into the tricyclic compound **6** which is an intermediate for the synthesis of a sesquiterpene.

## REFERENCES

- [1] T. Fujimoto, Y. Uchiyama, Y. Kodama, K. Ohta, and I. Yamamoto, *J. Org. Chem.*, **58**, 7322–7323 (1993).
- [2] N. Kishimoto, T. Fujimoto, and I. Yamamoto, *J. Org. Chem.*, **64**, 5988–5992 (1999).