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Hydroamination of terminal alkynes mediated by W(0) complex: A convenient tool for new enamines synthesis

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Streszczenie

Herein, we report the efficient synthesis of *E*-enamines with 100% regioselectivity by the hydroamination of various terminal alkynes with secondary amines (piperidine and piperazine) mediated by easily accessible tungsten(0) complex, at smooth conditions. We have successfully broadened the hydroamination protocol to obtain various new *E*-divinylpiperazines with excellent regio- and stereoselectivities. The crystal structure of two of them was determined, which allowed receiving information, among others, on the conformation of the C–C double bond. Furthermore, the reaction allows facile access to enamines containing the isoindoline-1,3-dione fragment with high regioselectivity. Selected divinylpiperazines have also been investigated by photoluminescence excitation and emission examination. On the basis of the experimental results, the pathway of the catalytic hydroamination of alkyne with piperazine has been proposed.

Słowa kluczowe

Hydroamination, Tungsten catalyst, Alkynes, Secondary amines, Enamines, Divinylpiperazines

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