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HYDROAMINATION OF CINNAMYL ALCOHOL

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In our group, we have been studying the hydroamination of styrene and its derivatives[1]. Here, we want to present a preliminary communication about the hydroamination of cinnamyl alcohol. This addition would afford 2-amino-3-phenylpropanols **(2)**, which are of biological interest due to its presence as constituents in the structure of different natural products isolated from many different sources, such as: *Allangium lamarckii, Anaphalis subumbellata, Aspergillus flaviceps, A. janus, A. glaucus, Caranthus pusillus, Cystoceria corniculata, Emericellopsis salmosynnemata, Euphorbia fischeriana, Hybanthus enneasperma, Medicago polymorpha, Penicillum canadiense, P.brevicompactum, P. megasporum, Piper aurantiacum and Schismatomma hypothallium.*

To our knowledge, there was no previous report of hydroamination on cinnamyl alcohol, although there has been reported[2] addition of alkyllithiums to **1**. Thus, lithium amides were prepared by addition of n-butyllithium to the parent amine at 0°C, and then cinnamyl alcohol dissolved in dry THF was added drop wise to the lithium amide. We prepared the ß-phenylethylamines shown in the table. We observed that cyclic secondary amines and aliphatic primary amines gave good yields of amination, but in other cases: diethyl amine, benzylamine and N-methylbenzylamine yields were very low. These results agrees with our previous results for styrene with methyl group in ß position[1].

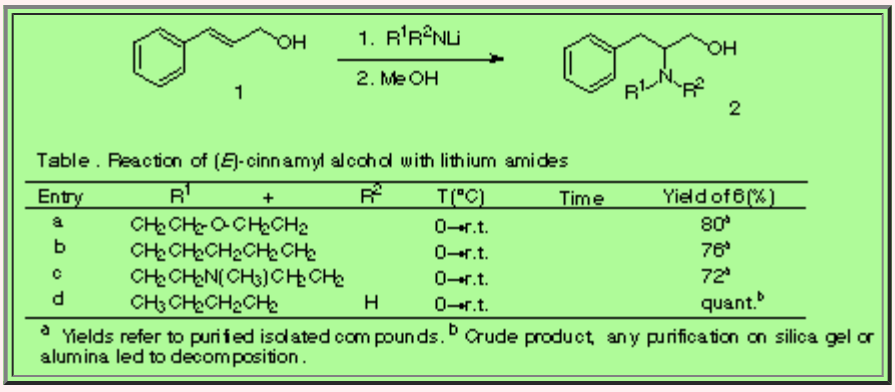

Table . Reaction of (*E*)-cinnamyl alcohol with lithium amides

Entry	R^1 + R^2	T(°C)	Time	Yield of 6(%)
a	CH_2CH_2-O-CH_2CH_2	0→r.t.		80[a]
b	$CH_2CH_2CH_2CH_2CH_2$	0→r.t.		76[a]
c	$CH_2CH_2N(CH_3)CH_2CH_2$	0→r.t.		72[a]
d	$CH_3CH_2CH_2CH_2$ + H	0→r.t.		quant.[b]

[a] Yields refer to purified isolated compounds. [b] Crude product, any purification on silica gel or alumina led to decomposition.

Actually we are trying to get a wider evidence of the behavior of other amines. We are studying as well, the possibility of getting choral induction in these additions.

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