Chukhajian E O et al., Pharm Anal Acta 2018, Volume 9
DOI: 10.4172/2153-2435-C4-043

18th Annual Pharmaceutical and Chemical Analysis Congress

November 05-06, 2018 | Madrid, Spain

The method of obtaining of p-terphenyl and its derivatives during vacuum distillation of 3-dialkylamino-1,4-diphenylhex-5-en-1-yn and -1-p-chlor(or -brom, or -methyl)-4-phenylhex-5-en-1-yn

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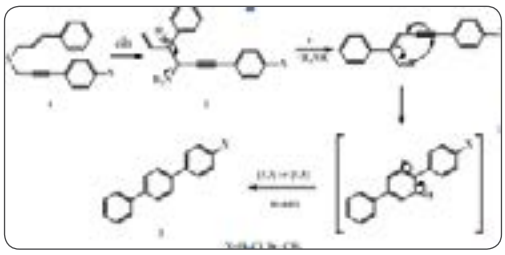
It is known that p-terphenyl and its derivatives are widely used in technology, in particular for synthesis of monomers in production of heat-resistant polymeric materials, film and photo materials, biologically active and pharmaceutical preparations. Recently Spanish scientists have made a scientific breakthrough: they synthesized an RNA-binding p-terphenylene which inhibits HIV-1 Rev protein function and can destroy the AIDS pandemic. The known methods of synthesis of p-terphenyls and its derivatives are long, multistage, high-temperature processes with use of hard-to-reach, dangerous substances and the difficult equipment, with big expense of the promoting substances and with low yields of target products. On the basis of the above mentioned, we have developed a new and affordable way for obtaining of p-terphenyl and its derivatives. The method consists in deamination of amines 2 during vacuum distillation which were obtained by us by Stevens's rearrangement of salts 1. Mechanism of transformation of the amines 2 to compounds 3 in the first stage involves β-elimination of secondary amines and leads to conjugated diene which by electro cyclic reaction forms cyclic allenic intermediate which rapidly by 1,3- or 1,5-hydrogen shift forms compounds 3. In the presence of alkyl groups at the atom of nitrogen the deamination take place at more high temperature. The deamination of amines containing bromine atom in the 4th position of benzene ring occurs more rapidly and at low temperature. The formation of compounds 3 is a good evidence of the fact that the Stevens rearrangement of the salts 1 occurs by conversion of migrating group and transfer of reaction centre in accepting group. The deamination of amines 2 during vacuum distillation has a general character, is a domino process and leads to formation p-terphenyl and its derivatives.



Recent Publications

1. Chukhajian E O, Shahkhatuni K G, Chukhajian E L O, Ayrapetyan L V and Panosyan H A (2017) Deamination of 3-(dialkylamino)-1,4-diarylhex-5-en-1-ynes during vacuum distillation. Russian Journal of Organic Chemistry 53(2):178.

Biography

Chukhajian E O is Leading Scientist and Head of the laboratory of amino compounds of the Scientific Technological Centre of Organic and Pharmaceutical Chemistry of Republic of Armenia. She discovered base-catalyzed intramolecular cyclization of unsaturated ammonium salts, intramolecular recyclization of 4-hydroxymethylisoindolinium salts and their condensed derivatives, double cyclization and recyclization, the phenomenon of isomerization of 3a,4-dihydroisoindolinium salts, Stevens rearrangement of the salts containing allylic type group along with 4-hydroxybuth-2-ynyl, the mechanisms of Mannich reaction, cyclization and recyclization. She has published more than 160 scientific works.

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