

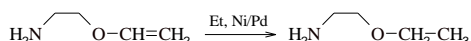
Introduction

ech TJ -0.04 Tw T* [(p)7(h)4(os)5(p)7(h)4(o)7(l)-3(a)9(n)4(es f)9(o)12(r t)-6(h)4(e r)6(s)5(t t)-5(im)4(e w)8(e u)3(s)-8(e)-4.9(d v)-3
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In order to obtain polyfunctional derivatives of phosphorous acid diols, in our investigations we used the chemical monomer of series of amino alcohols vinyl ethers-monoethanolamine vinyl ether. Due to the presence of amino- and vinyloxy groups these compounds have a great synthetic potential of amines and vinyl ethers. Vinyl ethers and their derivatives are of great interest as monomers for synthesis of polyfunctional compounds, which are widely used as chemotherapeutic drugs, polymer materials, pesticides, plant growth stimulators.

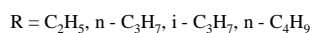
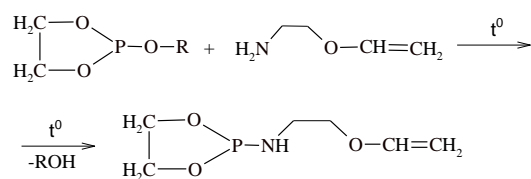
In the industry, ethoxyethylamine were obtained by catalytic hydrogenation on the basis of monoethanolamine vinyl ether. Ethoxyethylamine were used in synthesis of anti-diabetic medicines. The scheme of this medicinal preparation is given below:



The synthesized vinyl ethers of Schi's bases are of interest as polyfunctional monomer compounds for the development of the theory and practice of functionally substituted vinyl ethers of amino alcohols, and for the further development of targeted methods of new biologically active derivatives synthesis on their basis having a set of properties that are important for practical applications. The researches of properties of a number of Schi's bases containing amino groups, various on character [8-14] were conducted in order to clarify the relationship between the structure and reactivity of vinyl ethers of amino alcohols. Studying the properties and synthetic opportunities of amino alcohols vinyl ethers and their derivatives, the research on properties of a monoethanolamine vinyl ether monomer in reaction with phosphoric-acid-diols were continued.

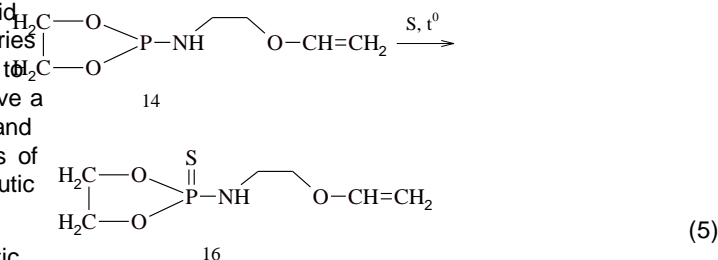
Earlier we studied condensations of monoethanolamine vinyl ether with various carbonyl compounds, the corresponding Schi's bases were received [15-23].

With a view to expand the series of polyfunctional and heteroatom-containing derivatives of amino alcohols vinyl ethers, including monoethanolamine vinyl ether, the series of derivatives of 1,3,2-dioxophospholanes vinyl ethers was synthesized in the result of interaction between alkyl-substituted diols of phosphorous acid with monoethanolamine vinyl ether:

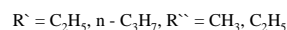
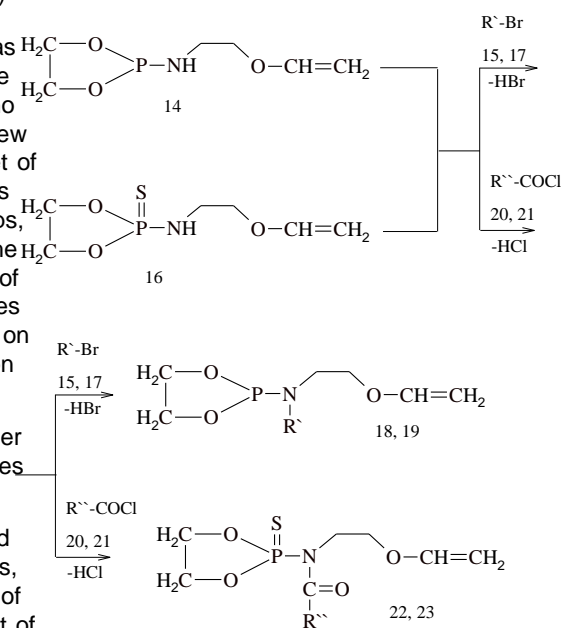


Molecules of 1,3,2-dioxaphospholane vinyl ethers derivatives contain reactive secondary amino groups and vinyloxy group. The presence of trivalent phosphorus of dioxaphospholane cycle and the double bond in vinyloxy group cause high reactivity. Thus, organic phosphorus compounds containing R-C-N, P-O-C fragments deserve attention as effective bioactive agents, protection agents and complexing agents. These compounds possess unique reactivity due to the mutual influence of geminal nitrogen and phosphorus atoms.

Due to our research interests in the field of organophosphorus compounds chemistry [8-10], we conducted the reaction of N-vinyloxiethyl-1,2,3-dioxaphospholane with elemental sulfur, which resulted in the corresponding synthesized thiophospholane:

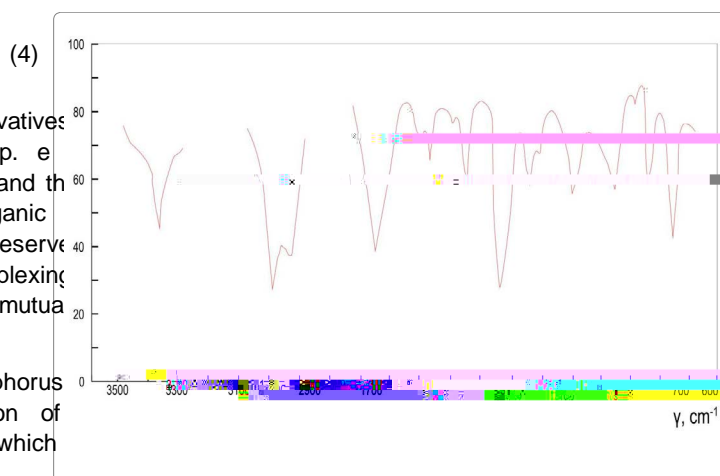


Reactions of alkylation and acylation were carried out in order to elucidate the reactivity of synthesized 1,3,2-dioxathio-phospholanes. As a result, the corresponding alkyl and acyl derivatives of phospholanes were obtained:



The structure of the obtained substances was confirmed by ³¹P-NMR and IR spectroscopy. IR spectra (ν): P=S (630-650), -N (890-920), -C-O (1135-1180), =C-O (1605-1625), N-H (3260-3280) (Figures 1-3).

³¹P NMR spectra (δ) [m.d.]: Pr n 72.40 (c), Pr iso 72.84(c), Bu n 72.90(c), Pr iso piperidyl- 74.10(c), Bu n PP piperidyl 73.90(c).



undergo an acylation reaction. In the result, acyl derivatives of cyclic phospholanes and their thio derivatives were synthesized.

The importance from the theoretical point of view of the amino derivatives of cyclic phospholanes are promising chemical monomers. Since the molecule contains vinyloxy and a secondary amine group. 1,3,2-dioxoazophospholanes form a class of biologically active substances and can have antibacterial properties.

Conclusion

In the process of phosphorylation of ethylene glycol in the presence of phosphorus trichloride and alcohols, cyclic alkyl derivatives of phospholanes were synthesized. On the basis of cyclic phospholanes and vinyl ether monoethanol amine, amine derivatives of phospholanes were first obtained. Subsequently, cyclic amino derivatives of phospholanes