

2. Природные антиоксиданты. Биотехнологические, биологические, медицинские аспекты / Л.В. Кричковська та ін. Харків : Модель Всесвіту, 2002. 373 с.
3. Britton G., Liaaen-Jensen S., Pfander H. Carotenoids Today and Challenges for Future // In book: Carotenoids / Eds. : G. Britton. Basel-Boston-Berlin : Birkhauser Verlaq, 1995. Vol. 1 A : Isolation and Analysys. P. 13–26.
4. Eurgster C.H. History: 157 years of Carotenoid Chemistry // In book: Carotenoids / Eds. : G. Britton, S. Liaaen-Jensen, H. Pfander. Basel-Boston-Berlin : Birkhauser Verlaq, 1995. Vol. 1 A : Isolation and Analysys. P.1–12.
5. Latscha T. Carotenoids – their Nature and Significance in Animal Feeds. Basel, 1990. P. 1–110.

UDC 547.572.1 + 547.789.13

**SYNTHETIC USAGE OF FUNCTIONALIZED
ARYLTHIOCYANATOAMIDES CONTAINING AN
ACETYLPHENYL FRAGMENT**

**Kytskai I. O., Vapliak L. V., Symchak R. V., Tulaidan H. M.,
Baranovskyi V. S.**

Ternopil Volodymyr Hnatiuk National Pedagogical University

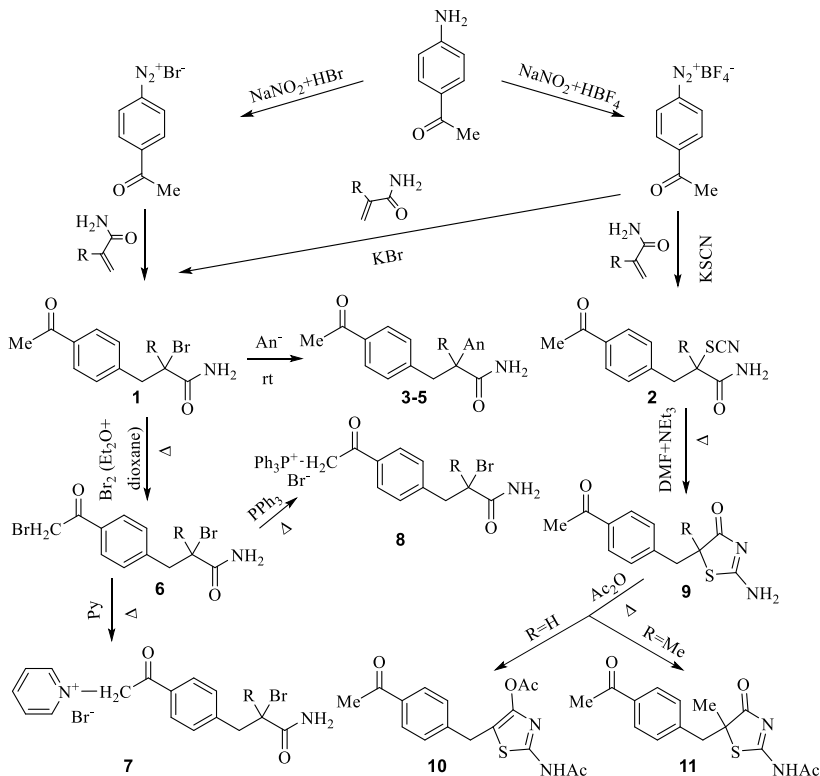
E-mail: baranovsky@tnpu.edu.ua

The number of aromatic diazo compounds investigated in anionarylation reactions, was recently significantly expanded due to the introduction of aniline derivatives with electron-donating and electron-withdrawing substituents and bisdiazonium salts based on diamines of benzidine and phenylene series [1].

As a continuation of our research, we investigated 4-acetylphenyldiazonium salts in Meerwein and anionarylation reactions. In particular, we obtained bromo- **1** and thiocyanatoarylation **2** products of acrylic and methacrylic acids amides, which contain an acetophenone fragment, and carried out their bromination and cyclization. Based on bromamides **1**, azido-, N,N-diethyldithiocarbamato-, and O-alkyldithiocarbonatoamides **3-5** were synthesized, which are practically impossible to obtain in conditions

Хімія навколишнього середовища, природних та біоактивних сполук

of direct anionarylation. α -Bromoacetyl derivatives **6** were transformed into quaternary pyridinium **7** and triphenylphosphonium **8** salts.



It is known that 2-thiocyanatoamides are convenient reagents for the preparation of 2-aminothiazol-4(5H)-one derivatives [3]. We used this approach for the synthesis of 2-amino-5-(4-acetylbenzyl)-(5-methyl)thiazol-4(5H)-ones **9**, which are formed in quantitative yields as a result of cyclization of thiocyanatoamides **2** upon boiling in dimethylformamide-triethylamine (10: 1) mixture. Compounds **9** under the action of acetic anhydride or acetyl chloride were transformed into acetyl derivatives **10, 11**.

According to the data of experimental studies, the synthesized

compounds proved to be quite effective in terms of antibacterial and antifungal action.

Thus, it is shown that 4-acetylphenyldiazonium salts can be used as effective arylating reagents in dediazonation reactions in the presence of unsaturated compounds and nucleophiles. The introduction of acetyl group into the structure of anionarylation products expands the possibilities of their usage in pure organic synthesis, in particular for the preparation of biologically active compounds and sulfur- and nitrogen-containing heterocycles.

Literature

1. Grishchuk B. D., Gorbovyi P. M., Baranovskyi V. S., Ganushak N. I. Catalytic and non-catalytic reactions of diazonium aromatic salts with alkenes in the presence of nucleophiles. *Journal of Organic and Pharmaceutical Chemistry*. 2008. Vol. 6 (3). P. 16–32.
2. Sivaguru P., Ning Y., Bi, X. New strategies for the synthesis of aliphatic azides. *Chemical Reviews*. 2021. Vol. 121(7). P. 4253-4307.
3. Alzahrani A. Y., Shehab W. S., Amer A. H., Assy M. G., Mouneir S. M., Aziz M. A., Hamid A. M. A. Design, synthesis, pharmacological evaluation, and in silico studies of the activity of novel spiro pyrrolo [3, 4-d] pyrimidine derivatives. *RSC advances*. 2024. Vol. 14(2). P. 995-1008.

UDC 547.775 + 547.496.3

THIOUREAS BASED ON 4-AMINOANTIPYRINE. SYNTHESIS AND RE-REGULATING ACTIVITY

¹ Omelchuk H. V., ² Baranovskyi B. V., ¹ Symchak R. V.,
² Zagrychuk G. Ya., ¹ Baranovskyi V. S.

¹ Ternopil Volodymyr Hnatiuk National Pedagogical University

² I. Horbachevsky Ternopil National Medical University

E-mail: baranovsky@tnpu.edu.ua

Today, one of the urgent tasks of organic chemistry is the synthesis of new analogues of natural biologically active compounds.