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ACAD. S.Yu. YUNUSOV INSTITUTE OF THE CHEMISTRY
OF PLANT SUBSTANCES

INTERNATIONAL SCIENTIFIC
CONFERENCE

Actual Problems of the Chemistry of Natural Compounds

ABSTRACTS

March 15–16, 2023
Tashkent

CONFERENCE TOPICS

1. Chemistry, biology, pharmacology, and technology of natural compounds and their derivatives.
2. Successes and problems of creation of new drugs.

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Acad. S.Yu.Yunusov Institute of the Chemistry of Plant Substances,
77, Mirzo-Ulugbek Str., Tashkent, 100170, Uzbekistan

SYNTHESIS OF NOVEL *MONO*-SUBSTITUTED TRIAZINE, CONTAINING A FARMACOPHORIC QUINAZOLINE RING

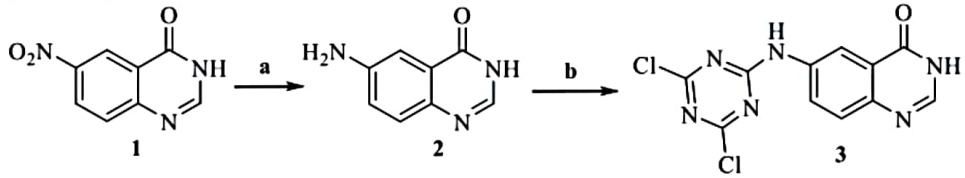
F. A. Zulpanov,[1] B. J. Elmuradov,[1] D. M. Ruziboev,[1]
B. A. Sobirov[2], J. O'. Muyassarov[3]

1) S.Yu. Yunusov Institute of the Chemistry of Plant Substances Academy of sciences of the Republic of Uzbekistan st. Mirzo-Ulugbek, 77, 100170 Tashkent
e-mail: zulpanovf@gmail.com
2) Mirzo Ulugbek National University of Uzbekistan, Faculty of Chemistry
3) Samarkand State University, University blv. 15, Samarkand 140104, Uzbekistan

Triazine derivatives are widely used as weed control agents. Most of them are selective herbicides. At present, preparations based on metamitron and metribuzin are approved for use. For a long time, triazines (*atrazine*, *simazine*, *propazine*, *promethrin*, *ametrine*, etc.) occupied a leading position in terms of production and use in world agriculture and were very widely used in our country. Since 2007, *atrazine* has not been included in the list of herbicides recommended for use, but in world practice it is still used in corn and sorghum crops.

Derivatives of *sim*-triazines are characterized by systemic and contact action. The selectivity of their action is associated with the transformation of chlorine-substituted into the corresponding hydroxy-substituted compound, which is not toxic to cultivated plants. The mechanism of herbicidal action of most 1,3,5-triazine derivatives is based on inhibition of the Hill reaction and blocking of water photolysis.

In the course of our research, we synthesized 6-nitroquinazolin-4-one (**1**) and reduced the nitro group with tin(II)-chloride dihydrate ($SnCl_2 \cdot 2H_2O$) to obtain the corresponding 6-aminoquinazolin-4-one (**2**) in 65% yield required for the reactions:



a) **1**:$SnCl_2$ $2H_2O$ (1:3), EtOH, HCl, 0-2 °C, 1 h; 20-24 °C, 1 h; 60-65 °C, 2 h.
b) **2**:Cyanuric chloride (1:1), K_2CO_3, acetone, 50-55 °C, 2 h.

Reaction of 6-aminoquinazolin-4-one (**2**) with cyanuric acid in a ratio 1:1 gives targeted *mono*-substituted 6-((4,6-dichloro-1,3,5-triazin-2-yl)amino)quinazolin-4(3H)-one (**3**) in excellent yield (93%). Melting point of **3** is 348-350°C. Experiments on the synthesis of di- and trisubstituted triazines are ongoing.

Structure of the product has been proven using physical methods of the research.

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