

## Synthesis of the new condensed and biheterocyclic derivatives of quinoxalinone on the basis of 3-hydrazinoquinoxalin-2(1H)-one

© Lilia V. Mustakimova,<sup>1,2</sup> Victor V. Syakaev<sup>1</sup> and Vakhid A. Mamedov<sup>1,2\*+</sup>

<sup>1</sup> A.E. Arbuzov Institute of Organic and Physical Chemistry. Kazan Research Center of the Russian academy of sciences. Arbuzov St., 8. Kazan, 420088. Tatarstan Republic. Russia.

Phone: +7 (843) 272-73-04, Fax: +7 (843) 273-22-53. E-mail: [mamedov@iopc.ru](mailto:mamedov@iopc.ru)

<sup>2</sup> Organic Chemistry Department. Kazan National Research technological University. K. Marx St., 68. Kazan, 420015. Tatarstan Republic. Russia. Phone: +7 (843) 272-12-53. Fax: +7 (843) 238-56-94.

\*Supervising author; +Corresponding author

**Keywords:** synthesis, 3-hydrazinoquinoxalin-2(1H)-one, phenyl isothiocyanate, maleic anhydride, [1,2,4]triazolo[4,3-a]quinoxalin-4(5H)-ones, 3-(1H-pyrazol-1-yl)quinoxalin-2(1H)-one, acrylic acid, tautomerism, IR, NMR spectra.

### Abstract

Methods of synthesis of the new condensed and biheterocyclic derivatives of quinoxalinone on the basis of the reaction of 3-hydrazinoquinoxalin-2(1H)-one with various reagents, suppliers one- and two- atomic fragments are developed. It is shown that the acid catalyzed intramolecular cyclization of 1-(quinoxalin-2(1H)-on-3-yl)-4-phenylthiosemicarbazide and *N'*-(quinoxalin-2(1H)-on-3-yl)acetohydrazide which are easily obtained by interaction of 3-hydrazinoquinoxalin-2(1H)-one with phenyl isothiocyanate and acetic acid, proceeds with formation of variously substituted [1,2,4]triazolo[4,3-a]quinoxalin-4(5H)-ones. Use of maleic anhydride as the supplier of a one-atomic fragment for the creation of a triazole ring in the reaction with 3-hydrazinoquinoxalin-2(1H)-one leads to the acrylic acid derivative with [1,2,4]triazolo[4,3-a]quinoxalin-4(5H)-one moiety in the position 3. Reaction 3-hydrazinoquinoxalin-2(1H)-one with acetyl acetone in acetic acid proceeds with the formation of 3-(pyrazole-1-yl)quinoxalin-2(1H)-one.