NEW DERIVATIVES OF 2-PYRROLIDONE-3-CARBOXYLIC ACID HYDRAZIDES: SYNTHESIS AND STRUCTURE

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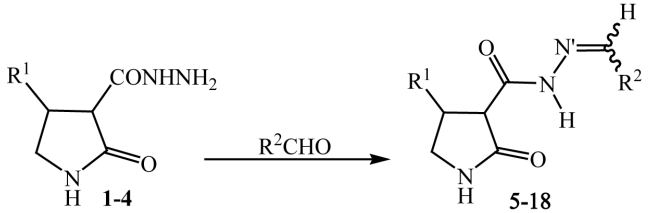
It is known that pyrrolidone cycle is "privileged structure" in the composition of neuroprotective drug molecules, racetams (piracetam, phenotropil and etc.)[1,2]. At the same time, representatives of a number of medicines (ftivazide, rifampicin, furazidin)[1] contain imino group that is a common fragment of synthetic and natural biologically active compounds. In this regard, the synthesis of promising pharmacologically active substances containing lactam cycle and imino group is of undoubted interest.

We developed convenient methods for preparing potentially biologically active N'-aryl(hetaryl)idenecarbohydrazides (**5**-**18**) based on the reactions of 2-pyrrolidone-3-carboxylic acid hydrazides (**1**-**4**) with aryl(hetaryl)aldehydes and their yields reach 92%.



$R^1 = C_6H_5$ (**1**), 4-$CH_3OC_6H_4$ (**2**), 4-$CH_3C_6H_4$ (**3**), indole-3-yl (**4**); $R^1 = C_6H_5$: $R^2 = C_6H_5$ (**5**), 4-$CH_3OC_6H_4$ (**6**), 3-pyridyl (**7**), 4-$NO_2C_6H_4$ (**8**); R^1 = 4-$CH_3OC_6H_4$: $R^2 = C_6H_5$ (**9**), 4-$CH_3OC_6H_4$ (**10**), 4-$CH_3C_6H_4$ (**11**), 3-pyridyl (**12**), 4-$NO_2C_6H_4$ (**13**); R^1 = 4-$CH_3C_6H_4$: $R^2 = C_6H_5$ (**14**), 4-$CH_3OC_6H_4$ (**15**), 3-pyridyl (**16**), 4-$NO_2C_6H_4$ (**17**); R^1 = indole-3-yl, R^2 = 4-$CH_3OC_6H_4$ (**18**).

The structure of synthesized compounds (**5**-**18**) isolated as a mixture of geometric isomers was confirmed by IR, ^1H and ^{13}C NMR spectroscopy involving HMQC, HMBC and NOESY experiments.

References

1 . Mashkovskii M.D. Lekarstvennye sredstva (Drugs). Moscow: RIA Novaya Volna, 2012.
2. Berestovitskaya V.M., Vasil'eva O.S., Ostroglyadov E.S. 2-Pyrrolidone and its derivatives. Asterion, 2013.

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