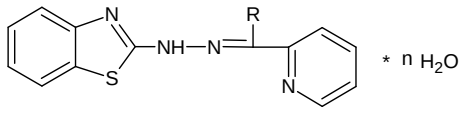
P28. Synthesis, structure and *in vitro* antiproliferative activity of some hydrazones

Aurelian Gulea[1], Anastasia Paholnitcaia[1*], Victor Tsapkov[1], Larisa Sofroni[2]

[1]Coordination Chemistry Department, Moldova State University, Chisinau, 2009, 60 Mateevici Str. Republic of Moldova
[2]Oncological Institute of Moldova, MD 2008, 30, Testemitanu str., Chisinau, Republic of Moldova

Heterocyclic compounds containing nitrogen and sulphur possess potential pharmacological activities. Benzothiazoles are bicyclic ring systems which have been the subject of great interest because of important biological activities. Benzothiazole moiety possesses diverse type of biological activities: antifungal [4], antibacterial [6], antihelminthic [5], antimalarial [3], analgesic [1], anti-inflammatory [7], anticancer [2] and various central nervous system (CNS) activities.

The present paper describes the synthesis, characterization and tested as inhibitors of human leukaemia (HL-60) cell growth of some benzothiazoles, Schiff bases. For this purpose, 2-[2- (pyridin-2-ylmethyliden)hydrazino]-1,3-benzothiazole (HL^1) and 2-[2-(1-pyridin-2-ylethyliden)hydrazino]-1,3-benzothiazole dihydrate (HL^2) have been synthesized. The composition and the structure of the synthesized substances have been determined by ^1H and ^{13}C NMR spectroscopy. The substances were tested on antiproliferation activity (Table 1).



HL^1: R=H, n=0
HL^2: R=CH_3, n=2

Table 1. Antiproliferative activity of some compounds against human myeloid leukaemia (HL-60),

Inhibitor	Concentration, μM/L		
	10	**1.0**	**0.1**
HL^1	93	88.9	
HL^2	99	95	92
Doxorubicin	95	92	16

Therefore, it can be inferred that the antiproliferative activity of the compounds HL^1-HL^2 is influenced by the nature of R^1, and its grows in the following order: H< CH_3.

The organic compounds extend the range of highly active inhibitors of human myeloid leukemia they are more active than Doxorubicin.

References

1. Baheti K.G, Kuberkar S.V. Indian J. Heterocyclic Chem. 2003; - Vol.12:- P.343-346
2. Bradshaw T.B, Bibby M, Double J.A, Fichter I, Cooper P.A, Aley M.C, Donohue S, Stinson F,Jamaszewjski J.B, Jamaszewjski E, Saville L Preclinical. Molecular Cancer Therapeutics 2002;- Vol.1.- P.239
3. Hout S, Azas N, Darque A, Robin M, Di Giorgio C, Gasquet M, Galy J, David PT. Parasitology 2004; - Vol .129. - P 525-535
4 .Mahram MA, El-Nassry SME, Allam SR, Zamaway LA.Pharmazie 2003.-Vol.58: -P.527-530.
5. Manian AK, Khadse BG, Sengupta SSR. Indian. J. Chemistry. 1993; 32B: 407
6. Mistry K, Desai KR. Indian. J. Chemistry; 2006**. -** Vol**.** 45B:-P 1762-1766.
7. Singh SP and Vaidya RK.Ind. J. Chem. 1986. Vol.25:-P 288-291.

* Corresponding author tel. +373 22 577689; e-mail address: anastasiea.kasta@mail.ru (Anastasia Paholnitcaia)