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Synthesis and anti-tumoral activity of *N,N*-dipropargylamino-pyrimidines and bistriazole derivatives against C6 glioma cell line

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ABSTRACT

An improvement in pharmacokinetic efficiency is observed when a bromine atom is inserted into analogues to development of new anti-tumor drugs [1]. Compounds containing pyrimidine and/or triazole nuclei have broad spectrum of pharmacological activities, including anticancer activity, just like molecules containing halogens in their structure [2]. In this work, dipropargylated and diallylated aminopyrimidines **3** and **5** were synthesized through a *N*,*N*-bimolecular nucleophilic substitution reaction from **1** with alkyl halides **2** and **4** [3]. The compounds **3** were subjected to a Huisgen dipolar [3+2] cycloaddition reaction to obtain the respective bistriazoles **7** [3]. The presence of the 4-bromophenyl substituent in **3** and **5** increased cytotoxicity activity against glioblastoma tumoral C6 cell line. Moreover, a simple structural comparison between the triazole core **7** and respective monoheterocyclic substrates **3** and **5** (Fig. 1) showed an increase of cytotoxicity activity (IC50) of the scaffolds of **7** in comparison to the precursors **3** and **5**.

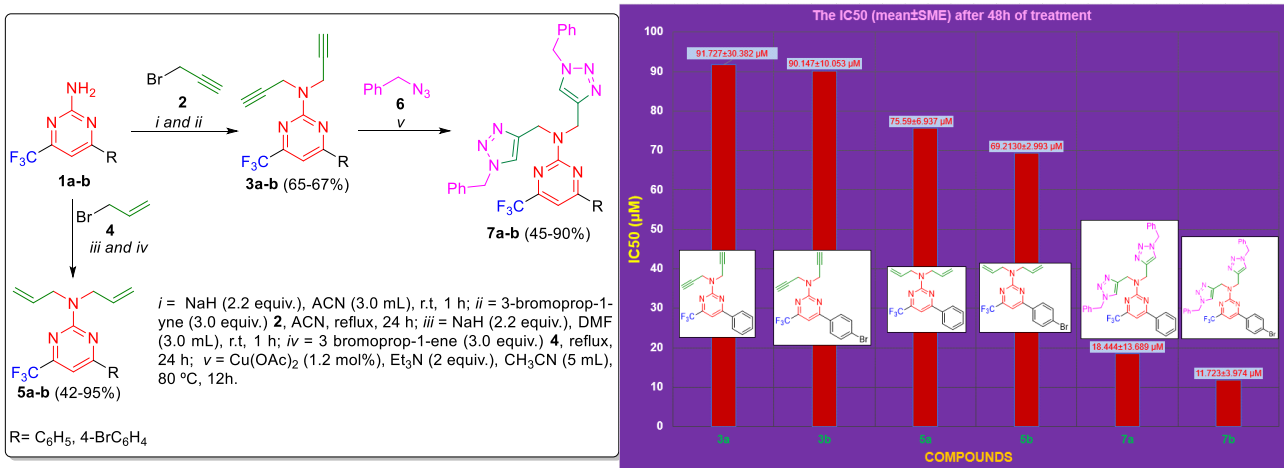

Figure 1. Synthesis and cytotoxicity for anti-tumoral glioma C6 cell line by MTT test of compds. **3**, **5**, **7**.

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REFERENCES

[1] Jităreanu, A. *et al.* Bromination - A versatile tool for drugs optimization. *Med. Surg. J.*, **2018**, *122*, 3.

[2] Sharma, V., Chitranshi, N., Agarwal, A. K. Significance and biological importance of pyrimidine in the microbial world. *Int. J. Med. Chem.*, **2014**, *1*, 31.

[3] Kaoukabi, H. et al. Dihydropyrimidinone/1,2,3-triazole hybrid molecules: Synthesis and anti-varicella-zoster virus (VZV) evaluation. *Eur. J. Med. Chem.*, **2018**, *155*, 772.