

The *N'*-substituted derivatives of 5-chloro-3-methylisothiazole-4-carboxylic acid hydrazide with antiproliferative activity.

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Streszczenie

Thanks to the progress in oncology, pharmacological treatment of cancer is gaining in importance and in the near future anti-cancer chemotherapeutics are expected to be the main method of treatment for cancer diseases. What is more, the search for new anti-cancer compounds with the desired application properties is constantly underway. As a result of designed syntheses, we obtained some new *N'*-substituted 5-chloro-3-methylisothiazole-4-carboxylic acid hydrazide derivatives with anticancer activity. The structure of new compounds was determined by mass spectrometry (MS), elemental analysis, proton nuclear magnetic resonance spectroscopy (^1H -NMR), carbon nuclear magnetic resonance spectroscopy (^{13}C -NMR), ^1H - ^{13}C NMR correlations and infrared spectroscopy (IR). Moreover, the structures of the compounds were confirmed by crystallographic examination. The antiproliferative MTT tests for 11 prepared compounds was conducted towards human biphenotypic B cell myelomonocytic leukemia MV4-11. SRB test was used to examine their potential anticancer activity towards human colon adenocarcinoma cell lines sensitive LoVo, resistant to doxorubicin LoVo/DX, breast adenocarcinoma MCF-7 and normal non-tumorigenic epithelial cell line derived from mammary gland MCF-10A. The most active compound was 5-chloro-3-methyl-*N'*-[(1*E*,2*E*)-(3-phenylprop-2-en-1-ylidene)isothiazole-4-carbohydrazide], which showed the highest antiproliferative activity against all tested cell lines.

Słowa kluczowe

5-chloro-3-methylisothiazole-4-carboxylic acid hydrazide derivatives, antiproliferative activity, isothiazole

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