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Cytotoxicity of some marine fungi metabolites against cancer cells

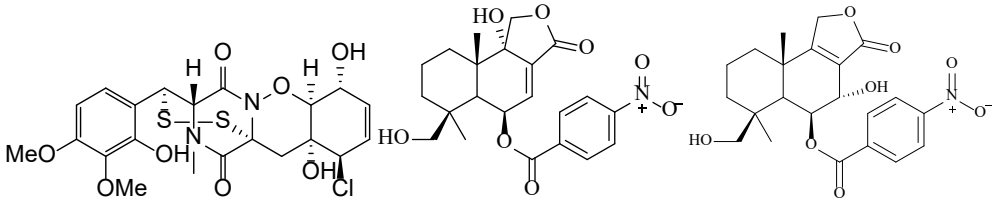
Key words: cancer cells, cytotoxicity, marine fungi metabolites

The aim of this study was investigate the cytotoxic activity of some low-molecular secondary metabolites of marine fungi-micromycetes. The influence of 38 compounds on the viability of mice neuroblastoma cells Neuro 2a, as well as human breast cancer cells MCF-7 and prostate cancer 22Rv1, was studied by MTT test.

It was found that neoehinulines B and C from the Vietnamese fungi *Eurotium niveoglaucum* demonstrated a cytotoxic activity against mice Neuro2a cells. Their EC_{50} concentrations were 50.9 **μ**M and 40.6 **μ**M, respectively. 4''-Dehydroxycandidusine A and **c**andidusine A were less toxic EC_{50} = 78.9 **μ**M and 75.7 **μ**M, respectively.

N-methylpretrichodermamide B **1** at a concentration of 100 **μ**M induced the death of 47% of the neuroblastoma cells. It was found earlier, that N-methylpretrichodermamide B was highly cytotoxic against 22Rv1, PC-3, and LNCaP cancer cells with IC_{50} 0.51, 5.11, and 1.76 μM, respectively.

The highest cytotoxic activity was demonstrated by sesquiterpenoid nitrobenzoyl esters 9α,14-dihydroxy-6β-p-nitrobenzoylcinnamolide **2** with EC_{50} = 4.9 μM, while its analogue **3** did not affect to viability of cells. Treatment human breast cancer cells (MCF-7) with compound **2** shown a less cytotoxic effect (EC_{50} = 59.6 μM), compared to mice neuroblastoma cells, whereas compound **3** is practically inactive. The effect of compound **1**on drug-resistant prostate cancer cells 22Rv1 was very significant with EC_{50} =3μM. Compound **2** was no toxic against this cancer cells also.



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Thus, the same marine fungal metabolites have big potential as anticancer compounds.

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