

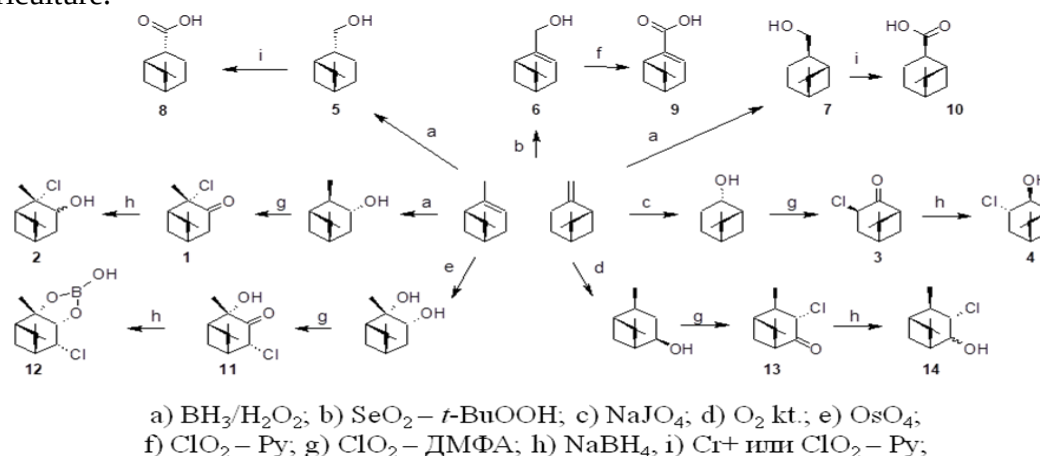
ORAL PRESENTATIONS

SYNTHESIS AND ANTIFUNGAL ACTIVITY OF MONOTERPENE ALCOHOLS, ACIDS AND CHLORINE-CONTAINING DERIVATIVES

L. L. Frolova, L.E. Nikitina, A.V. Kutchin

Institute of Chemistry, Komi Science Centre of the Ural Branch of the Russian Academy of Sciences, 48 ul. Pervomayskaya, 167000 Syktyvkar, Russian Federation. frolova-ll@chemi.komisc.ru

Monoterpenoids demonstrate a wide range of biological activity, e.g., antifungal, antibacterial, anticancer, antioxidant, and some other properties. Chemical modification of natural compounds gave novel biologically active substances showing new or improved properties. Taking into account the fact that both enantiomers of α -pinene are widely distributed in nature; pinanyl structures are very attractive platforms for the synthesis of new compounds potential for application in medicine, pharmacology, and agriculture.



α -Chloro ketones are 4-16 times more active than the corresponding chlorohydrins against yeast fungi and 2-4 times more active against filamentous fungi. Hydroxy ketones and diols were found almost inactive. Comparison of antifungal activity of enantiomers once again confirms the fact that enantiomers can differ significantly in biological activity [1, 2].

Compound	MIC/($\mu\text{g mL}^{-1}$)		Compound	MIC/($\mu\text{g mL}^{-1}$)		Compound	MIC/($\mu\text{g mL}^{-1}$)	
	<i>Candida albicans</i>	<i>Aspergillus niger</i>		<i>Candida albicans</i>	<i>Aspergillus niger</i>		<i>Candida albicans</i>	<i>Aspergillus niger</i>
7	125	125	9	500	250	4	500	500
5	31	250	3	62.5	125	14	250	250
(-)-6	125	250	13	62.5	125	2	500	500
10	250	250	1	31	125	12	1000	1000
8	250	500	11	31	250	Флуконазол	62.5	250

References:

1. L. L. Frolova et al., Chemistry of Natural Compounds, V. 60, 5, p. 835, doi:10.1007/s10600-024-04459-4.
2. L. L. Frolova et al., Russian Chemical Bulletin, V. 74, 12, p. 3763, doi:10.1007/s11172-025-4848-3.