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Extended Abstract

Double Modification of Polyether Ionophores: Synthesis and Biological Activity of Novel Salinomycin Derivatives †

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Polyether ionophore antibiotics represent a large group of more than 120 lipid-soluble compounds that are widely used in veterinary medicine because of their significant antimicrobial activity. In addition to the industrial use of ionophores, some of them effectively and selectively inhibit properties of different cancer cells and enhance the antitumor effects of chemo- and/or radiotherapy. Salinomycin (**SAL**) is particularly interesting in this regard, as it shows potent activity against various types of cancer cells, including those that display multidrug resistance, and cancer stem cells. Therefore, a very interesting direction of research is chemical modification of **SAL** which may lead to obtaining analogs that are characterized by better biological activity and lower toxicity than those of the starting compound.

Within the library of **SAL** analogs investigated, its C1 and C20 derivatives have shown noteworthy improvements in the biological activity profile. Moreover, our previous studies support the double-modification of **SAL** as a useful strategy to generate agents with promising biological activity profiles for targeting various types of cancer. For example, it has been proven that the activity of double-modified **SAL** analogs can surpass commonly used cytostatic drugs in the multidrug resistant cancer cell lines. Here, we report the synthetic access to novel class of C1/C20 doubly modified **SAL** derivatives, and we present the results of the evaluation of their biological activity.

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