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NOVEL INHIBITOR OF HSF1 ACTIVITY, CL-43, SUPPRESSES EPITHELIAL-MESENCHYMAL TRANSITION OF DLD1 COLON CANCER CELLS

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Colorectal cancer is highly tumorigenic and in a quarter of patients metastases are observed making the search for the anti-metastasis drugs an actual task. Recently, it was found that basic process of metastasis cascade, epithelial-mesenchymal transition, EMT, may be regulated by HSF1 heat shock transcription factor. The factor controls the synthesis of heat shock proteins and enhances cell resistance to antitumor therapy. In this study, we show that a new inhibitor of HSF1 activity, cardioglycoside CL-43, is capable of suppressing TGFβ1-induced EMT. CL-43 significantly reduced the migration and proliferation of DLD1 human colon tumor cells treated with TGFβ1. Analysis of the vimentin level showed that the treatment of CL-43 cells led to a reduction in this marker of EMT, as well as to the return of the expression and localization of another marker, E-cadherin, to the initial indicators. Our results indicate that CL-43 has a therapeutic potential in the treatment of highly metastatic colorectal tumors.

Keywords: HSF1, epithelial-mesenchymal transition, DLD1