Disruption of exon recognition and misregulation of alternative splicing are a common cause of human diseases including cancer progression. Currently the analysis of cancer-specific alternative splicing is a promising step forward in basic and translational molecular biology. Traditional medicine has a long history and is still the major source of medicine in developing countries. Approximately 70% of the South African population consults traditional healers, perpetuating the need for scientific appraisal of traditional medicine as a means to establish its efficiency and safety. Also, pharmacological and phytochemical insights into several plants have led to the discovery of novel chemicals and therefore novel drugs. Alternatively, such novel chemical structures can serve as lead compounds/templates for the design of new drugs. The aim was to ascertain if the South African medicinal plants have anticancer splicing activity. 10c cells were treated with *Tulbhaghiaviola* and *Cotyledon orbiculata*, followed by mRNA extraction and RT-PCR. The results showed that *Tulbhaghiaviola* and *Cotyledon orbiculata* extracts have anti-cancer splicing activity on the BCLX and the AXL apoptosis genes. Additionally, *Cotyledon orbiculata* extract has an anticancer splicing activity of the angiogenesis gene VEGF165. VEGF Elisa also confirmed the VEGF165 VEGF165b splicing switch. It was shown that South African medicinal plants have anti-cancer splicing activity. It is being continued to screen more medicinal plants and will select those extracts with anti-cancer splicing activity for further studies. These further studies should identify numerous splicing pathways and completely elucidate the splicing target compounds that may serve as novel anti-cancer drugs or lead compounds.

Biography

Zodwa Dlamini is the Deputy Executive Dean at the University of South Africa. She is the Vice Chairperson of the South African Medical Research Council Board. She also represents the National Department of Health in the Department of Science and Technology Scientific Advisory Committee on Preclinical Drug Development Platform. She holds an appointment as an honorary research fellow at the University of Bristol, UK. She is a Professor of Functional Genomics and Molecular Genetics. Her research interests include characterization of genes involved in cancer and apoptosis with a focus on a Ubiquitin-like DWNN and proteins involved in ceramide signaling.

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