Mojhgan Sheikhpour et al., J Cancer Sci Ther 2014, 6:10
http://dx.doi.org/10.4172/1948-5956.S1.033

OMICS Group Conferences
Accelerating Scientific Discovery

4th World Congress on
Cancer Science & Therapy
October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore Conference Center, USA

Possibility of using dopamine receptors specific drugs in drug delivery or treatment of lung cancer

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Introduction: The alterations of five different Dopamine receptor genes expression play multiple roles in various disorders such as cancer. We focused on relationship of dopamine receptor gene expression changes in non small cell lung cancer (NSCLC) disease for design of future therapeutic strategy.

Material and methods: We investigated dopamine receptors gene expression changes in peripheral Blood Mononuclear cells of NSCLC patients compared to normal individuals. In addition were done this investigation on samples of lung tissue and Bronchoalveolar Lavage (BAL) of NSCLC patients. The extraction of total cellular RNA, cDNA synthesis and Real Time PCR was done for all of samples. The statistical comparison between the two groups was carried out using the SPSS software. Then we investigated apoptosis in a lung carcinoma cell line as an in vitro model of NSCLC using selective agonist of these receptors (BR).

Results: The results showed a quantitative significant difference of D2-like dopamine receptor genes expression in non small cell lung cancer. It has been demonstrated that BR inhibited the proliferation of human lung cancer cells and induced apoptosis in them.

Conclusions: Since the receptor pattern has a key role for the choice of the most appropriate treatment schedule for a successful medical therapy, these significant differences and profiles could contribute in treatment of non small cell lung cancer by using selective agonist of dopamine receptors as a drug or drug delivery tools.

Biography

Mojhgan Sheikhpour has completed his PhD at the age of 35 years from Tarbiat Modaress University Faculty of Biological Sciences. She teaches and investigates in Tehran University in Iran and has published papers in reputed journals.

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