1st International Conference on Recent Developments in Science, Humanities & Management-2018
Amar Singh College Cluster University, Gogji Bagh, Srinagar (J&K) (ICRDSHM-18)
17th-18th April 2018 www.conferenceworld.in ISBN : 978-93-87793-09-5

Role of Fungal endophytes in Cancer Prevention

Refaz A. Dar[1] , Shabir Ahmad Rather[1] and Qazi Parvaiz Hassan[1]

1. ***Biotechnology Division, Indian Institute of Integrative Medicine, CSIR, Sanatnagar Srinagar , India.***

ABSTRACT *Cancer is the major threat worldwide, with considerable variations in incidence, mortality, survival, occurrence and causative factors. It was estimated that the number of new cases of cancer will increase from an estimated 10 million cases in 2000 to15 million in 2020 and by 2050, the cancer burden could reach 24 million cases per year worldwide. According to latest world cancer statistics, approximately14.1 million new cancer cases and 8.2 million cancer-related deaths occurred in 2012 (WHO, 2013). In developing countries oral cancer among males and cervical and breast cancers among females are the main causes of mortality. Available drugs in cancer chemotherapy are expensive and development of drug resistance is a common phenomenon. Therefore, finding natural and low cost drugs against various types of cancers is becoming an important challenge. Natural products are very promising source of alternative medicines. Endophytic fungi have been found to be a good reservoir of bioactive compounds and can have the potentiality to compensate the need of a novel low cost anticancer drug. In this study, two endophytic fungal isolates belonging Polyporales sp and Bjerkandera adusta, were isolated from the Rheum emodi, Wall. Ex Meisn and Dioscoria deltodia respectivelly. Cytotoxic effects of the compounds isolated from the two endophytes, were evaluated through MTT and colony formation assay. Both the compounds shows potent anticancer activity against THP-1(Leukemia), A549 (Lung), NCI-H322 (lung) and Colo-205(colon) at a concentration of 70 and 100µM. However significant inhibition was found against A549 at 100µM. Furthermore, the compounds were treated with A549 cell line induces cycle arrest and mitochondrial potential loss in a concentration dependent manner.*

Keywords: Endophyte, cancer, cell line