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Promoting Of Ovarian Cancer of Role and Hallmarks of Sp1

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Abstract

A late diagnosis, intrinsic drug resistance, and rising interest in discovering novel DNA binding and transcription factor agents as potential therapies in treating ovarian and other gynaecological cancers are all contributing factors to the poor prognosis of ovarian cancer. A deeper knowledge of Sp1's role in the initiation and progression of human cancer is still needed, but it is clear from several prior publications that Sp1 controls the expression of many cellular genes. Sp1 has been discovered to have a dual role, activating and suppressing cellular genes that could otherwise become oncogenes or engage in biological processes like proliferation, differentiation, DNA damage response, apoptosis, and angiogenesis. In fact, there are indications that Sp1 has identical protein variants known as Sp2 and Sp3 support Sp1 in promoting the growth of tumour cells.

Keywords: Hallmark of cancer; ovarian cancer; Sp1; Transcription factor

Introduction

These characteristic Sp1 traits and their fascinating biological function-related information are yet unclear [1]. Therefore, we briefly discuss the function, traits, and proteins connected to the Sp1 family of transcription factors do serve as "hallmarks of cancer" in this study [2]. We also examine the evidence that suggests Sp1 is significantly overexpressing the genes that contribute to the development of ovarian cancer [3]. As a result, we draw the conclusion that the best way to lower the incidence of ovarian cancer would be to promote Sp1, which is one of the greatest diagnostic tools for early ovarian cancer detection cancer [4]. One of the most fatal gynaecological diseases is ovarian cancer, especially in older women [5]. In terms of prevalence, ovarian cancer is the sixth most frequent cancer worldwide and the seventh most common cause of cancer mortality in women. For women who are diagnosed with advanced ovarian cancer, the overall 5-year survival rate is just the prognosis for ovarian cancer is the worst of all gynaecological cancers [6]. The malignant characteristics of ovarian cancer include invasion of the local stroma, distant metastases, treatment resistance, and angiogenesis [7]. Numerous studies have shown that Sp1 and/or other transcription factors overexpressed or activated numerous genes in ovarian cancer cells, leading to the growth of tumours [8].

Discussion

Thus an innovative therapeutic target will be created to treat ovarian cancer in its early stages exploiting the possible role of transcription factors in this disease [9]. Human epididymis protein 4, carrion - embryonic antigen, legumain, mesothelin, osteopontin, and vitamin E binding plasma protein are a few of the biomarkers being utilised to identify ovarian cancer [10]. Polyadenosine diphosphate-ribose polymerase inhibitors and angiogenesis inhibitors are two examples of the promising inhibitor medicines that have been utilised to treat ovarian cancer. 1 But only in the early stages of ovarian cancer can these medicines work. As a result, it is challenging to diagnose ovarian cancer in its early stages. A greater understanding of the molecular biology of ovarian cancer is therefore necessary right away to save lives. the people who have this most lethal cancer. The exact relationship between survival rate, responsiveness to treatment, and the role of transcription in ovarian cancer is being attempted to comprehend through a combined genomic study in ovarian cancer11 that has been carried out. 12, 13 Thus, it is evident that developing effective treatments for ovarian cancer would arise from the classification of transcription factors for carcinogenesis as well as for cancer progression. 14, 15 The Specificity Protein is one of the most prevalent transcription factors that have been linked to the spread of ovarian cancer. The Sp1 protein is a member of the Sp/Kruppel family. One of the most common causes of death from malignancy in the reproductive organ is ovarian cancer. Dissemination in the peritoneal cavity and a sporadic incidence of visceral metastases are characteristics of the condition.

Conclusion

The chance of developing ovarian cancer is increased in per menopausal women. It is largely evident from the prior findings that individuals with ovarian cancer do not typically exhibit early-stage symptoms that would allow for a diagnosis. 26 Up to this point, accurate early detection and diagnosis of ovarian cancer have been difficult to achieve. Wide-ranging ovarian cancer symptoms include changes in bowel habits, Timpanists or meteors', abrupt weight loss, changes in appetite, and diffuse stomach complaints. And bloating in the abdomen 26 Pelvic and abdominal pain, enlarged abdomen, bloating, and difficulty eating are all potential signs of ovarian cancer in its early stages. 27 While digestive issues like nausea, vomiting, constipation, and diarrhoea are among the symptoms of ovarian cancer's final stages Factor in transcription Sp1, also known as specificity protein 1, is a human gene encoded protein. The first eukaryotic transactivator with diverse activities toward cellular genes has been identified as the Sp1 protein. Purified Sp1 includes 778 amino acid single polypeptide chains with a molecular mass of 105 kDa, according to a prior work by Veena et al. 29 Through the control of gene expression, it plays a dual role in the activation and inhibition of genes, altering the affinity of nuclear translocation, Sp1 protein synthesis rate, and DNA-binding. 30 The prior reporting indicates that changes in the post-translational modifications of the Sp1 protein may be the cause of the gene expression defaults. 31 According to numerous studies, Sp1 post-

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translational modifications also involve phosphorylation, acetylation, and glycosylation.

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Conflict of Interest

None

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