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ANTIBACTERIAL, ANTIVIRAL AND ANTICARCINOGENIC EFFECT OF A NOVEL LECTIN CHARACTERIZED AND PURIFIED FROM *TERFEZIA CLAVERYI*

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ABSTRACT : Lectins are glycoproteins connected to starch noncovalently, a novel lectin was refined from the wild mushroom *Terfezia claveryi*. This lectin likewise exhibited hemagglutinating action. Cleansing of lectin was practiced by 45% immersion ammonium sulfate pursued by particle trade chromatography on DEAE cellulose section at that point gel filtration chromatography Sephadex G100 with decontamination crease 2.793, atomic weight 45KDa, it is an acidic protein with the most noteworthy solidness at pH 6.5. Divalent particles did not influence its action and it was steady under warming till 80oC.The antibacterial action of Terfezia claveryi lectin against P.aeruginosa disconnects was considered. Unrefined and purged *Terfezia claveryi* lectin were exposed to antibacterial movement against *Pseudomonas aeruginosa* pathogen. The outcomes indicated that *Terfezia claveryi* lectin at fixations, 100 and 50 µg/ml hold good antibacterial activity against *P. aeruginosa* confines as contrasted and control (P<0.05). The antibacterial activity of cleaned and unrefined *Terfezia claveryi* lectin in focus 100 µg/ml was higher than an antibacterial activity of fixation 50 µg/ml (P<0.05). Furthermore, the antibacterial activity of purified *Terfezia claveryi* lectin was significantly higher than crude, P<0.05. The half leaf method was applied to find out the antiviral action of *Terfezia claveryi* lectin toward TMV *in vitro*. TMV infection could also be inhibited by this lectin. It potentially can be used for developing anti-phyto-viral agents to control plant diseases and also represents a useful addition to the present consortium of mushroom lect. 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) method was used to study the cytotoxicity effect of *Terfezia claveryi* lectin on some cancer and normal human cell line. The results showed the cytotoxicity effect on liver hepatocellular cancer cell line compared with normal embryonic liver cell line, the use of lectins obtained from natural plant source shows great promise and potential for use in future cancer therapy.

Key words : Antibacterial, antiviral, anticarcinogenic.

INTRODUCTION

Lectins are glycoproteins attached to carbohydrate noncovalently (Taylor and Steve, 2008) lectins in small amounts play an important role in body processes, like the immune trigger and cell growth. Research shows lectins could have a role in cancer therapy (Yau *et al*, 2015). Resistant to an antibiotic is a big problem in medicine with a great worry from it in the 21st century. Microorganisms progressing new resistance technique by high prevalence, threatening number of infectious diseases therapy, also, raising the number of nosocomial infections (Lee and Ventola, 2015). There are at least three reasons for the requirement of the newestnatural origin antimicrobial materials, reason one is, these days people worry about poisonous of synthetic materiales involve dealing with chemicals every day. A second reason is that novel anotherdrugs are people hope to use against many pathogens and diseases. They may discover more efficiency medication than currently used, available, safer or even production with low cost. The last reason based on a technique used to produce natural materials is abundant andordinarily, can be simulated in different scales manufacture with recent biotechnological knowledge. (Wright, 2014; Gupta *et al*, 2010). This implies the characteristic sources still bloom with novel antimicrobial substances hanging tight for found. In the worldwide biological system plants is essential significance. Reason for both the simplicity of extraction with high item that can be gotten, plants still the most significant wellspring of lectin (Mostafa *et al*, 2018). The lectins are wide appropriation protiens in nature, because of a one of a