Zenab Aly Torky, J Antivir Antiretrovir 2015, 7:4
http://dx.doi.org/10.4172/1948-5964.C1.024

OMICS International
conferenceseries.com

5th World Congress on
Virology

December 07-09, 2015 Atlanta, USA

Characterization of antiviral activity against Herpes Simplex Virus type-1 and antiproliferative activity against human cancer cell-line of lectin from Euphorbia species

Zenab Aly Torky
Ain Shams Uninversity, Egypt

Lectin is a protein that specifically bound and cross-linked with carbohydrates and involved in the activation of the lectin pathway which is considered a part of both innate and adaptive immunity. Lectin also has a role in plant defense system. Lectin was isolated from Euphorbia and purified through aqueous extraction, ammonium sulfate precipitation, dialysis, filtration on super dex 75, ion exchange chromatography on SP-sepharose gel.

Lectin exhibits hemagglutinin activity towards rabbit erythrocytes on concentration 50µg/ml. This hemagglutinin activity was retained by lectin till 60°C. Effect of pH, and denaturalizing agent on lectin was also studied, and found to have a low pH range (6-8). Molecular weight was determined for lectin using SDS gel-electrophoresis and found to be 30KD, and determined by gel filtration to be 60KD, indicating that lectin is homodimer in the plant.

From cytotoxicity assay of Euphorbia on the vero cell lines using MCT, and found out that using a concentration till 100µg/ml of Euphorbia was within the safe limit. Also the determination of antiviral activity of the Euphorbia lectin against HSV1 on vero cell lines was investigated using plaque reduction assay and MTT, showing 76% of virus inhibition. Mechanism of action of the effect of lectin on HSV1 was also investigated using MTT, and RT-PCR.

As for the effect of the lectin on the virus life cycle, the study showed that lectin actually interfere with the entry phase of the virus into the cells, that is to say, it affects the virus attachment phase. This inhibition of the virus was totally diminished when the lectin was combined with EDTA before infection with HSV1.

Antiproliferative activity of Euphorbia was also studied against different human cancer cell lines by MTT assay.

Using a specifically designed primer the gene(s) encoding the lectin was isolated by PCR, and it was found that lectin is actually encoded by multi gene family.

Biography

Zenab A.Torky has completed her PhD in Microbiology from Ain shams university, Egypt, in 2004, and her research interests are virology and immunology in plant and human, using molecular biology techniques.

ZenabAly72@yahoo.com

Notes: