Black Walnut

Latin Name: Juglans nigra

INTESTINES; PARASITES; SKIN Disorders

Use HULLS, Leaves, Bark
Native to Eastern North America; Similar species in Europe and Himalayas

HISTORY
1) For Centuries in EUROPE – Laxative; SKIN AILMENTS; Herpes; Eczema
2) American Indians - LAXATIVE
3) Doctrine of Signatures (William Cole, 1600s) Walnut looks like skull and brain: Good for "Wounds in the head… profitable for the Brain, and resists poysons;"
4) Culpepper-1600s "a piece of the green husks put into a hollow tooth, eases the pain"
5) Civil War (1861-1865): Dysentery and Diarrhea

QUALITIES
1) NUTRIENTS – Green Hulls: High IODINE content
- Nut: Calcium; Fluoride; Magnesium; Manganese; Phosphorus; Potassium

2) Oxygenates Blood which Kills PARASITES
- TAPEWORMS; PINWORMS; RINGWORMS; CANDIDA; Cleansing
- Gastrointestinal Tract mucus; Laxative; Constipation; Flatulence; Ulcers
- Burns up Fats and Toxins while balancing Sugar Levels

3) Blood Purification; SKIN Rashes; Sores; Eczema; Boils; Dandruff; Sore Mouth and Inflamed Throat; Sore Eyes

4) OTHER
- Antiseptic; Infections
- Green Hull causes SWEATING
- Cancer

Black Walnut References

Herb History and General Information

Commission E Monograph. Walnut Hull. Published June 1, 1990. See excerpts at www.herbalgram.com accessed December 27, 2014

Felter, Harvey Wickes, M.D., and John Uri Lloyd, Phr. M., Ph.D., *King's American Dispensatory;* 1898. See excerpts at http://www.henriettes-herb.com accessed 8-6-14

Grieve, M., *A Modern Herbal, Vol I & II*. New York and London: Hafner Publishing Co.; 1967. See excerpts at www.botanical.com accessed August 6, 2014

Keith, Velma J. and Monteen Gordon, *The How To Herb Book*. Pleasant Grove, Utah: Mayfield Publications; 1996

Ritchason, Jack, N.D., *The Little Herb Encyclopedia*. Pleasant Grove, Utah: Woodland Health Books; 1995

Studies None found on hulls as of December 27, 2014

Additional info on Studies:

CERVICAL CANCER
Zhang W, Liu A, Li Y, Zhao X, Lv S, Zhu W, Jin Y. Anticancer activity and mechanism of juglone on human cervical carcinoma HeLa cells. Can J Physiol Pharmacol. 2012 Nov;90(11):1553-8. doi: 10.1139/y2012-134. Epub 2012 Nov 18. [PubMed]

Zhang 2012
Department of Pharmacology, School of Pharmaceutical Sciences, Jilin University, Changchun 130021, Jilin Province, PR China.
Abstract
Induction of apoptosis in tumor cells has become the major focus of anti-tumor therapeutics development. Juglone, a major chemical constituent of Juglans mandshurica Maxim, possesses several bioactivities, including anti-tumor. In the present study, HeLa cells were incubated with juglone at various concentrations. The proliferation inhibition of juglone on HeLa cells was tested by the MTT assay. Occurrence of apoptosis was detected by Hoechst 33258 staining, flow cytometry, and transmission electron microscopy. The expression of apoptotic-related proteins was examined by Western blot. The results showed that juglone inhibits the growth of HeLa cells in dose-dependent manner. Topical morphological changes of apoptotic body formation after juglone treatment were observed. The percentages of early apoptosis of Annexin V-FITC were 5.23%, 7.95%, 10.69%, and 20.92% with the concentrations of juglone (12.5, 25, 50, and 100 μmol/L), respectively. After cells were treated with juglone at the different dose for 24 h, the expression of Bcl-2 was significantly down-regulated and the expression of Bax was significantly up-regulated compared with the control. These events paralleled with activation of caspase-9, -8, -3, and PARP cleavage. The results suggest that juglone may be effective for the treatment of HeLa cells.

LEUKEMIA
Xu HL, Yu XF, Qu SC, Zhang R, Qu XR, Chen YP, Ma XY, Sui DY. Anti-proliferative effect of Juglone from Juglans mandshurica Maxim on human leukemia cell HL-60 by inducing apoptosis through the mitochondria-dependent pathway. Eur J Pharmacol. 2010 Oct 25;645(1-3):14-22. doi: 10.1016/j.ejphar.2010.06.072. Epub 2010 Jul 23. [PubMed]

Xu 2010

Department of Pharmacology, School of Pharmaceutical Sciences, Jilin University, Changchun 130021, Jilin Province, PR China.

Abstract

Induction of apoptosis in tumor cells has become the major focus of anti-tumor therapeutics development. Juglone, a major chemical constituent of Juglans mandshurica Maxim, possesses several bioactivities including anti-tumor. Here, for the first time, we studied the molecular mechanism of Juglone-induced apoptosis in human leukemia HL-60 cells. In the present study, HL-60 cells were incubated with Juglone at various concentrations. Occurrence of apoptosis was detected by Hoechst 33342 staining and flow cytometry. Expression of Bcl-2 and Bax mRNA was determined by quantitative polymerase chain reaction (qPCR). The results showed that Juglone inhibits the growth of human leukemia HL-60 cells in dose- and time-dependent manner. Topical morphological changes of apoptotic body formation after Juglone treatment were observed by Hoechst 33342 staining. The percentages of Annexin V-FITC-positive/PI negative cells were 7.81%, 35.46%, 49.11% and 66.02% with the concentrations of Juglone (0, 0.5, 1.0 and 1.5 microg/ml). Juglone could induce the mitochondrial membrane potential (DeltaPsim) loss, which preceded release of cytochrome c (Cyt c), Smac and apoptosis inducing factor (AIF) to cell cytoplasm. A marked increased of Bax mRNA and protein appeared with Juglone treatment, while an evidently decreased of Bcl-2 mRNA and protein appeared at the same time. These events paralleled with activation of caspase-9, -3 and PARP cleavage. And the apoptosis induced by Juglone was blocked by z-LEHD-fmk, a caspase-9 inhibitor. Those results of our studies demonstrated that Juglone-induced mitochondrial dysfunction in HL-60 cells trigger events responsible for mitochondrial-dependent apoptosis pathways and the elevated ratio of Bax/Bcl-2 was also probably involved in this effect.

LIVER CANCER

Chen L, Na-Shun BY, Zhang J, Yu J, Gu WW. [Effect of juglone on the ultrastructure of human liver cancer BEL-7402 cells]. Nan Fang Yi Ke Da Xue Xue Bao. 2009 Jun;29(6):1208-11. [PubMed] [Article in Chinese] [Free full text available]

Chen 2009

Laboratory Animal Center and Institute of Comparative Medicine, Southern Medical University, Guangzhou, China. yaligj@126.com

Abstract

OBJECTIVE: To study the effect of juglone on the ultrastructure of human liver cancer BEL-7402 cells.

METHODS: BEL-7402 cells were incubated in the presence of 12.5 micromol/L juglone for 24 h, and fixed in 2.5% glutaraldehyde for HE staining and Coomassie brilliant blue staining and scanning electron microscopy.

RESULTS: Incubation with juglone resulted in obvious changes in the cell morphology and cytoskeletal alterations of the cells. Scanning electron microscopy revealed reduced volume of the cell bodies, dissociation of the cells, curling and malformation of the microvilli on the cell surface with rupture of the intercellular junction

and enlargement of the intercellular space. The formation of apoptotic bodies was observed. Transmission electron microscopy showed expansion of the endoplasmic reticula, mitochondrial cristea disintegration, nucleolar fragmentation and formation of the apoptotic bodies after the exposure to juglone for 24 h.

CONCLUSION: Juglone can cause ultrastructural changes of human liver cancer BEL-7402 cells and induce their apoptosis.