Abstract:

Herb medicinal plants are one of the largest pharmaceutical suppliers for the majority of people in the world. The overpopulation and demand for plants as raw material of pharmaceutical industry, have led to more attention and research on medicinal importance plants. One of these plants is the *Cressa cretica*, which contains several flavonoids, including quercetin. The important Pharmacological effect of quercetin, are antioxidant, anti-tumor activity and it is one of the ingredients for the medication such as Aphrodite tablets, syrup of eucalyptus incense, ointment Calendula and drug addiction treatment. Establishing the ways of increasing the amount of FLS gene expression and raising the quercetin into plant tissue, will be a great help in the treatment of different diseases and produce more drugs. In this study, the samples were treated with external application of abscisic acid (300 ppm) at two-stages of five-day spray interval for FLS gene expression using Real Time PCR. The purpose of using the abscisic acid in two stages was to find the effect of concentration of hormone on the expression of specific genes and abscisic acid durability in the plants. All the PCR reactions were repeated three times for the genes 18srRNA and FLS and the data analyzed by using livak law formula" $2^{-\Delta\Delta CT}$». The variation between the target gene expression level and control samples were calculated by the Duncan's multiple range test and differences were considered significant for 1 and 5%. All analyzes were performed by SAS v9 software. The results indicate that expression of hormone -treated FLS increased in the second stage abscisic acid. Statistically observation showed significant differences in gene expression between treated and control samples, at level of 1%. In the first phase, there were no significant differences between the Abscisic acid treatment and control samples and it suggested that by remaining the abscisic acid in plants, the expression of the genes will increase. In addition to these treatments, the cytokinin treatment (500 ppm) resulted, the FLS gene expression at the 5% level, indicating that the hormone cytokinin affected on gene expression. Due to the small sample size and small population studies, it is suggested that similar studies related to this research with more samples and different treatments will better statistical results.

Key words: Alkalli weed, Flavenoid, Quercetin**,** Abscisic acid, Anthocyanine, RP- HPLC.

University of zabol
Graduate schoola
Faculty of agriculture
Department of plant breeding and biotechnology

The Thesis submitted for the Degree of M.Sc
(in the field of Biotechnology)

Evaluation of Flavonol synthasis (FLS) gene expression in Alkalli weed (Cressa cretica) using plant growth regulators by Real Time PCR

Supervisors:

Dr. M. solouki
Dr. B. fakheri

By:
D. naderi

Jan 2014