

News & Comments

The Effects of Alkaloids as Potential Inducers of this Transcription Factor

Sharma Kumar

The significant family of transcription factors known as NF- κ B is known to regulate the expression of several genes. The expression of genes related to immunity, inflammation, and cell survival is regulated by NF- κ B activators, which also trigger the dissociation of I- κ B and the translocation of the remaining dimer to the nucleus. Although NF- κ B activity is crucial for proper physiology, several chronic inflammatory conditions and malignancies have been linked to NF- κ B overexpression. However, mounting data suggest that, depending on the type of cell and the apoptotic stimuli, activation of NF- κ B plays a critical role in either preventing or encouraging cell death. The purpose of this research was to ascertain the effects of plant extracts on nuclear factor κ B.

Sigma-Aldrich (St. Louis, Missouri, USA) supplied the following chemicals: Petroleum ether (Cat. No. 77399), acetone (Cat. No. 32201), chloroform (Cat. No. 32211), dimethyl sulfide (DMSO; Cat. No. 51779), 96% ethanol (Cat. No. 24106), 2,2-Diphenyl-1-picrylhydrazyl (DPPH; Cat. No. D9132), ascorbic acid (Cat. No. A7506), α -tocopherol (Cat. No. V1104). Anhydrous sodium carbonate (Cat. No. 223484), bismuth nitrate pentahydrate, and Folin and Ciocalteu phenol reagent (FC reagent Cat. No. F9252) (Cat. No. 467839). Between February and October 2010, the authors gathered and identified the plant's aerial parts on the Maltese Islands. Sreevidya and Mehrotra's spectrophotometric technique was utilized to calculate the estimated total alkaloids. Every measurement was made in triplicate and average results were reported.

Aqueous, ethanol, acetone, chloroform, and petroleum ether had the lowest extract yields. In addition, the phenolic content of the *J. bocconeii* ethanolic and acetone extracts was substantially higher than that of the other extracts ($p < 0.05$) when compared to them. Four traditionally used Maltese medicinal plants were the subject of this study to ascertain their pharmacological capabilities. Three or more extracts from each plant revealed dose-dependent free radical scavenging action, according to the results of the study on the subject. These results are consistent with earlier studies that had found similar efficacy in plant extracts from the same genera. These extracts' scavenging activity was on par with that of well-known, strong antioxidant standards. New information on the quantitative phytochemical composition and free radical scavenging activity of *J. bocconeii* and *C. suffruticosa* is presented in this study.

The results also reveal significant pharmacological capabilities of the *R. bracteosa* acetone and ethanol



extracts, for which it has been shown that they can induce an increase in NF- κ B transcriptional activity.

JOURNAL REFERENCE

Darmanin-Ellul, R., E. Attard, A. Fenech and R. Ellul-Micallef, 2021. Effects of plant extracts on the transcriptional activity of nuclear factor- κ B. *Res. J. Med. Plants*, 15: 18-28.

KEYWORDS

Aloe vera, *Jasonia bocconei*, *Calendula suffruticosa*, *Ruta bracteosa*, HEK293, luciferase activity, DPPH

