

IMMUNOMODULATORY EFFECT OF CARDAMONIN IN IMMUNO-INFLAMMATORY PROCESS OF PRIMARY GOUGEROT-SJOGREN'S SYNDROME

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Résumé

Introduction/Objectives: The objective of our study was primarily to investigate the immunomodulatory role exerted ex vivo by cardamonin (C16H14O4) on the production of cytokines and proinflammatory mediators represented by TNF- α , IL-6, and nitric oxide, as well as the effect of this chalcone on the expression of inducible NO synthase (iNOS) and NF-KB activation in patients with primary Sjögren's syndrome (pSS).

Patients and methods: Our study involved a sample of thirty-two (n=32) Algerian patients with Sjögren's syndrome. The control group consisted of eighteen (n=18) healthy volunteers free of any systemic pathology, matched for age and gender. We analyzed the in vitro production of nitric oxide in circulating peripheral blood cells (PBMCs) of pSS patients using the Griess method. Our analysis was complemented by an immunofluorescence study evaluating the expression of iNOS and NF-KB in PBMCs of pSS patients. In addition, the effect of cardamonin on IL-6 and TNF- α production levels was also studied and measured by ELISA.

Results and discussion: Our results clearly demonstrated an immunomodulatory effect exerted by cardamonin in pSS patients, marked by a significant decrease in nitric oxide, TNF- α , and IL-6 levels in this category of patients. Interestingly, our results also highlight a downregulation of iNOS expression and NF-KB activation.

Conclusion: Overall, our results suggest that cardamonin may exert a potential anti-inflammatory effect in pSS. The underlying mechanism of action of cardamonin may involve the regulation of iNOS expression and/or IL-6 and TNF- α production. Furthermore, this effect appears to be closely linked to the suppression of NF-KB signaling pathway activation.

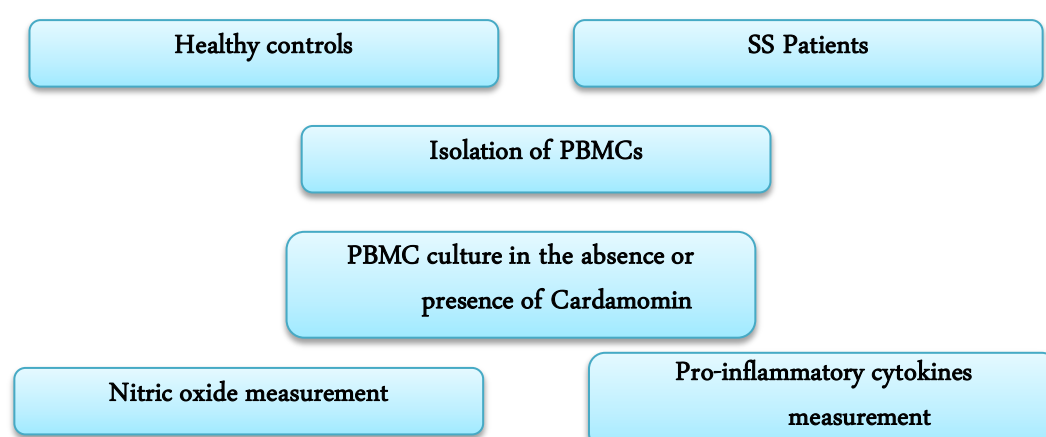
1- INTRODUCTION

The objective of our study was primarily to investigate the immunomodulatory role exerted ex vivo by cardamonin

(C16H14O4) on the production of cytokines and proinflammatory mediators represented by TNF- α , IL-6, and nitric oxide,

as well as the effect of this chalcone on the expression of inducible NO synthase (iNOS) and the activation of NF-KB in patients with primary Sjögren's syndrome (pSS).

2-PATIENTS AND METHODS



3- RESULTS

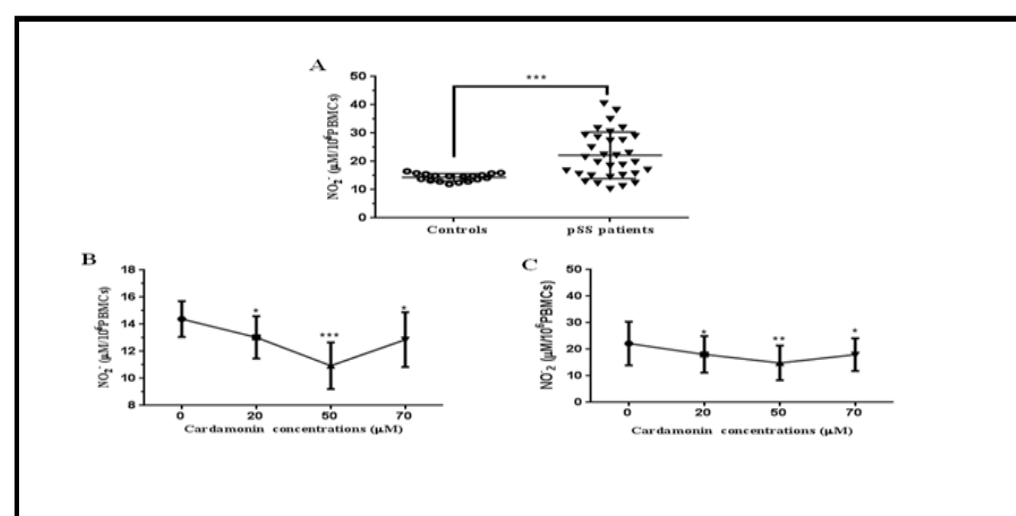


Figure 1: Effect of cardamomin on NO production in PBMC culture supernatant

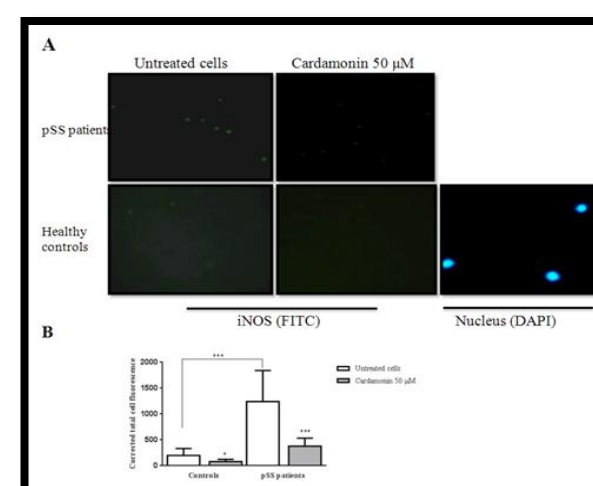


Figure 3: Effect of cardamonin on iNOS

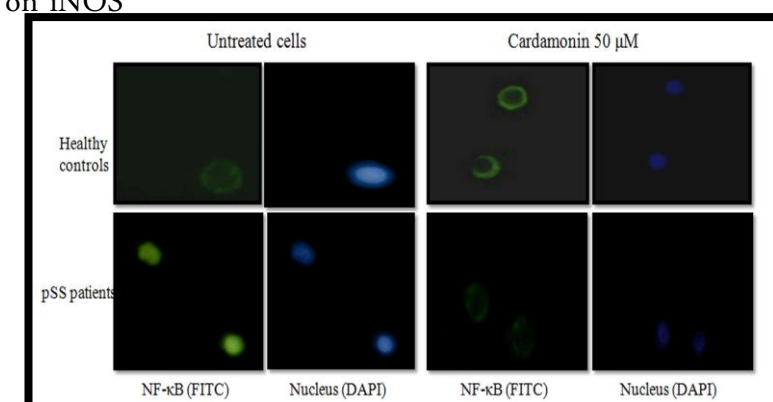


Figure 4. Effect of cardamonine on NF-KB activity

Our results clearly showed a significant decrease in nitric oxide, TNF- α , and IL-6 levels implying an immunomodulatory effect exerted by cardamonin in pSS patients. Moreover, interestingly, our results also highlight a downregulation of iNOS expression and NF-KB activation.

4-CONCLUSION

Cardamonin may exert a potential immunoregulatory effect in pSS. Its mechanism of action may involve the regulation of iNOS expression and/or IL-6 and TNF- α production and appears to be closely linked to the downregulation of NF-KB signaling pathway activation.

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