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# EFFECTS OF QUINTON® ISOTONIC SOLUTION ON HUMAN NEUTROPHILS

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## INTRODUCTION

Quinton® isotonic solution consists in ultrafiltered diluted seawater with a final concentration of 9 g/l NaCl, obtained from nutrient-rich areas (marine vortices), and that contains most of the mineral elements necessary for the correct functioning of the body's cells. In our previous studies, Quinton® isotonic solution has shown different immunomodulatory activities on lymphocytes. The aim of this study is to analyse the effect of Quinton® isotonic solution on neutrophils' respiratory burst.

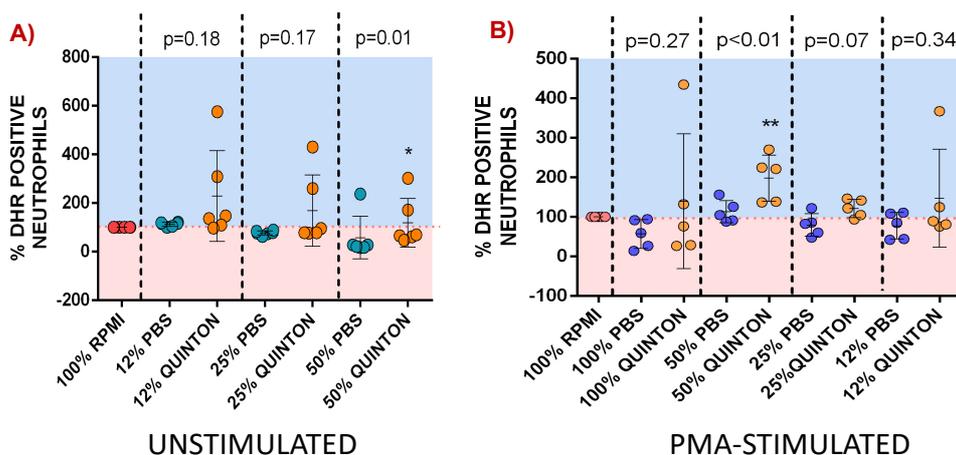
## MATERIALS AND METHODS

Anticoagulated blood samples from 6 healthy donors and 4 patients with Psoriatic Arthritis. Human neutrophils were isolated by density gradient centrifugation with Percoll from anticoagulated blood samples. 100.000 neutrophils were cultured in rounded 96-well plates with different ratios of RPMI:Quinton® isotonic solution and RPMI:PBS (as control). For the study of the neutrophils, respiratory burst was induced by incubating cells with phorbol 12-myristate 13-acetate (PMA) and measured by flow cytometry after adding dihydrorhodamine 123.

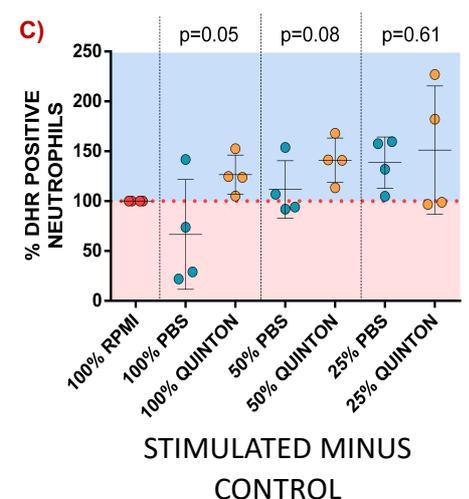
## RESULTS

In healthy donors, Quinton® isotonic solution increased the percentage of positive neutrophils for respiratory burst, with and without stimulation. In the case of non-stimulation (A), the increase was significant ( $p=0.01$ ) for the 50% concentration of the Quinton® isotonic solution when compared to their respective PBS concentration. Furthermore, in the stimulated cultures (B), the increase was significant for the 50% concentration ( $p<0.01$ ), with nearly significant p-value for the 25% concentration ( $p=0.07$ ). With respect to patients suffering from Psoriatic Arthritis (C), it was observed that the values are close to being significant for both 50% and 100% concentration of the Quinton® isotonic solution when compared to their respective PBS concentration ( $p=0.08$  and  $p=0.05$ , respectively).

### HEALTHY DONORS



### PATIENTS WITH PSORIATIC ARTHRITIS



**CONCLUSION.** Quinton® isotonic solution, on the basis of these preliminary results, seems to modulate neutrophils function *ex vivo*.