

INTRODUCTION

Allergic asthma and rhinitis affect over 400 million people worldwide with significant impact on daily life¹. The air pollution and the excessive hygiene seem to be the main etiopathogenetic hypothesis². Many drugs are used to control allergy symptoms, while immunotherapies, desensitizing allergens (vaccines) and specific antibodies can prevent allergic reactions. Recently, literature studies demonstrated that the balance of intestinal flora is an important factor for a correct functionality and development of immune system³, but the effects of probiotic supplementation on microbiota remain to be clarified.

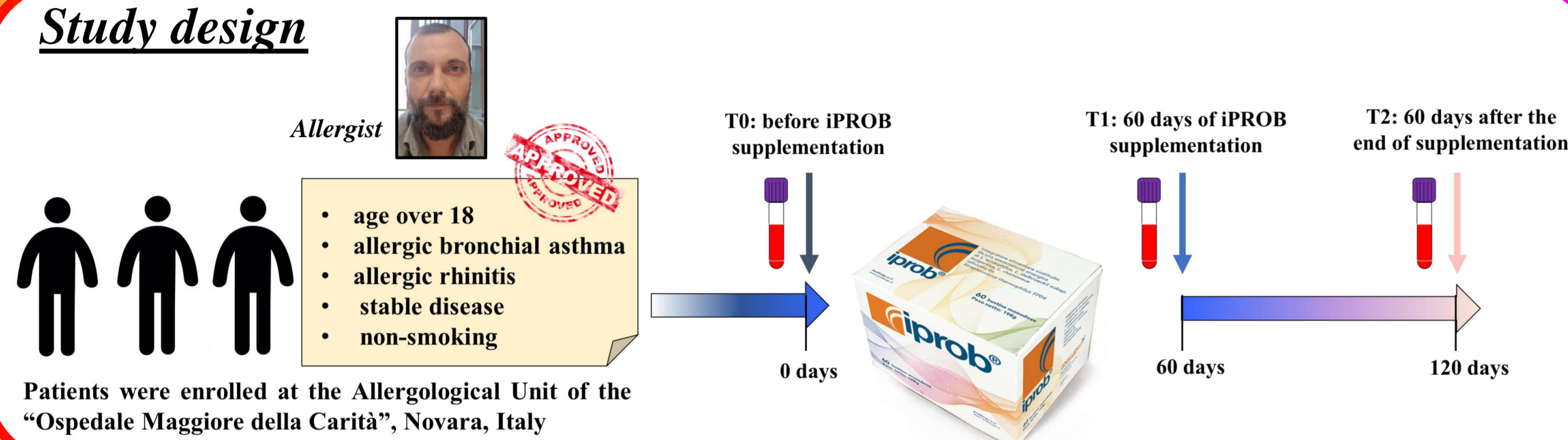


AIMS OF THIS STUDY

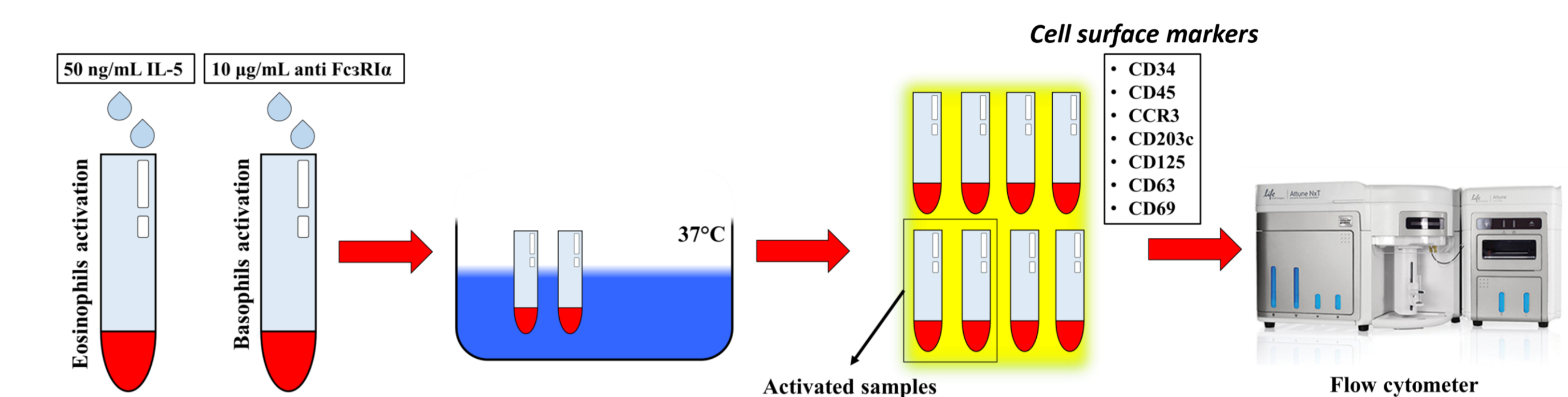
- To study the clinical effects of a probiotic (iPROB®) in patients affected by allergic rhinitis and/or allergic asthma
- To understand whether iPROB® can modify the phenotype and the function of some immune cell populations

MATERIALS AND METHODS

Study design



Eosinophil/basophil activation and cell characterization



iPROB® is produced for Anallergo S.p.A. by Probiotical S.p.A. (NO), Italy

Th2 profile Serum IL-4 and IL-5 levels were measured by ELISA

RESULTS AND DISCUSSION

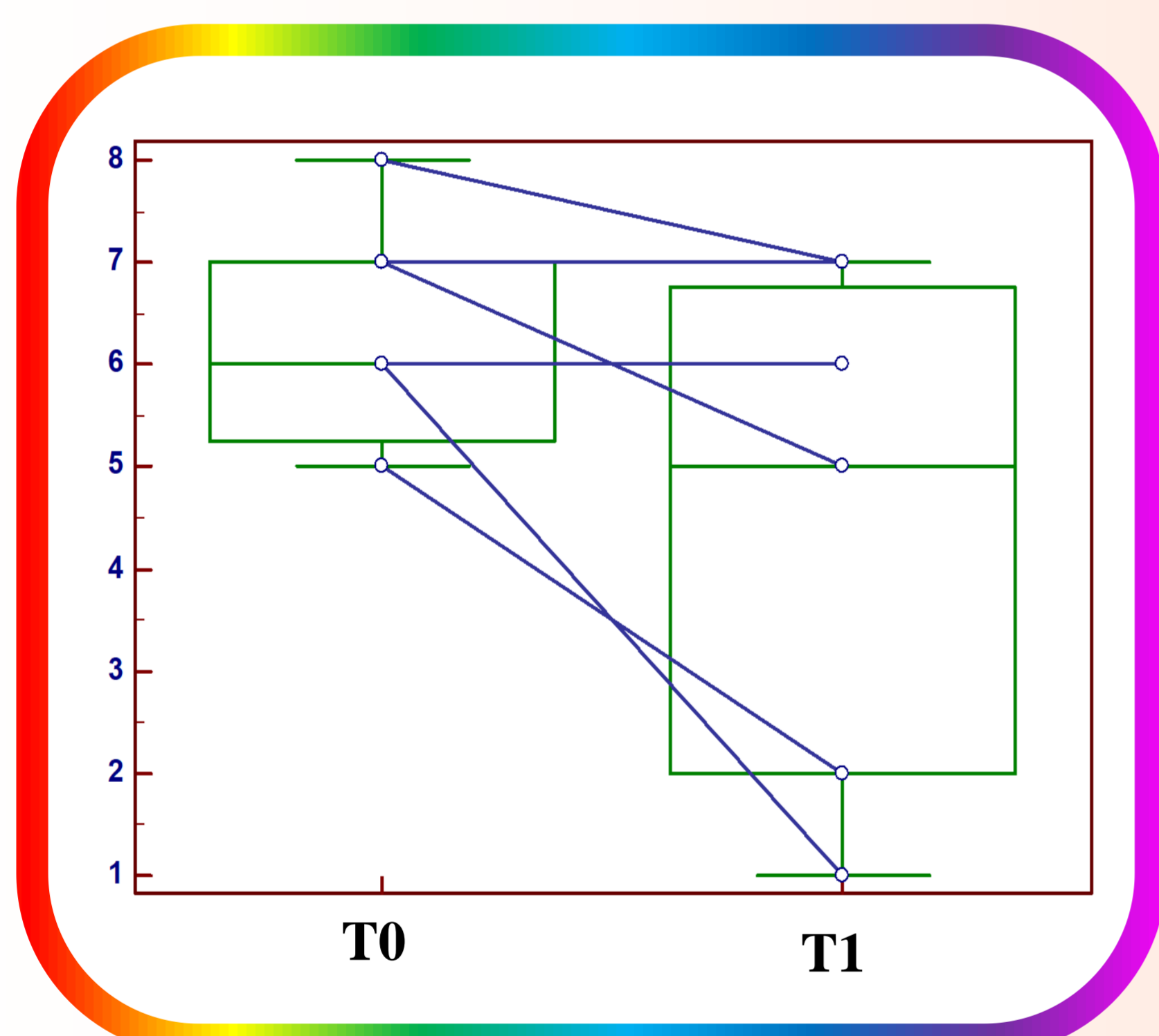


Figure 1. Significant difference (Test t for paired data, $p = 0.02$) between T0 and T1, regarding quality of life of patients, measurable with Average Rhinitis Total Symptom Score (ARTSS).

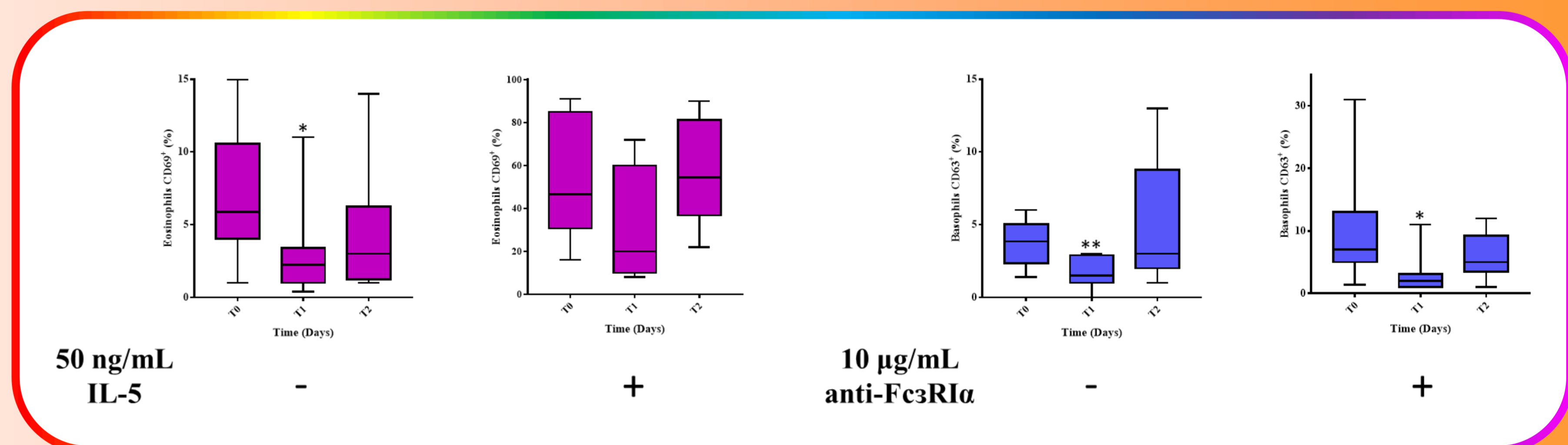


Figure 2. A significant ($P < 0.05$) reduction in the number of both activated eosinophils ($d = -4.25$) and basophils ($d = -1.95$), as well as in the stimuli-activated eosinophils and basophils ($d = -7.83$), was measured at T1.

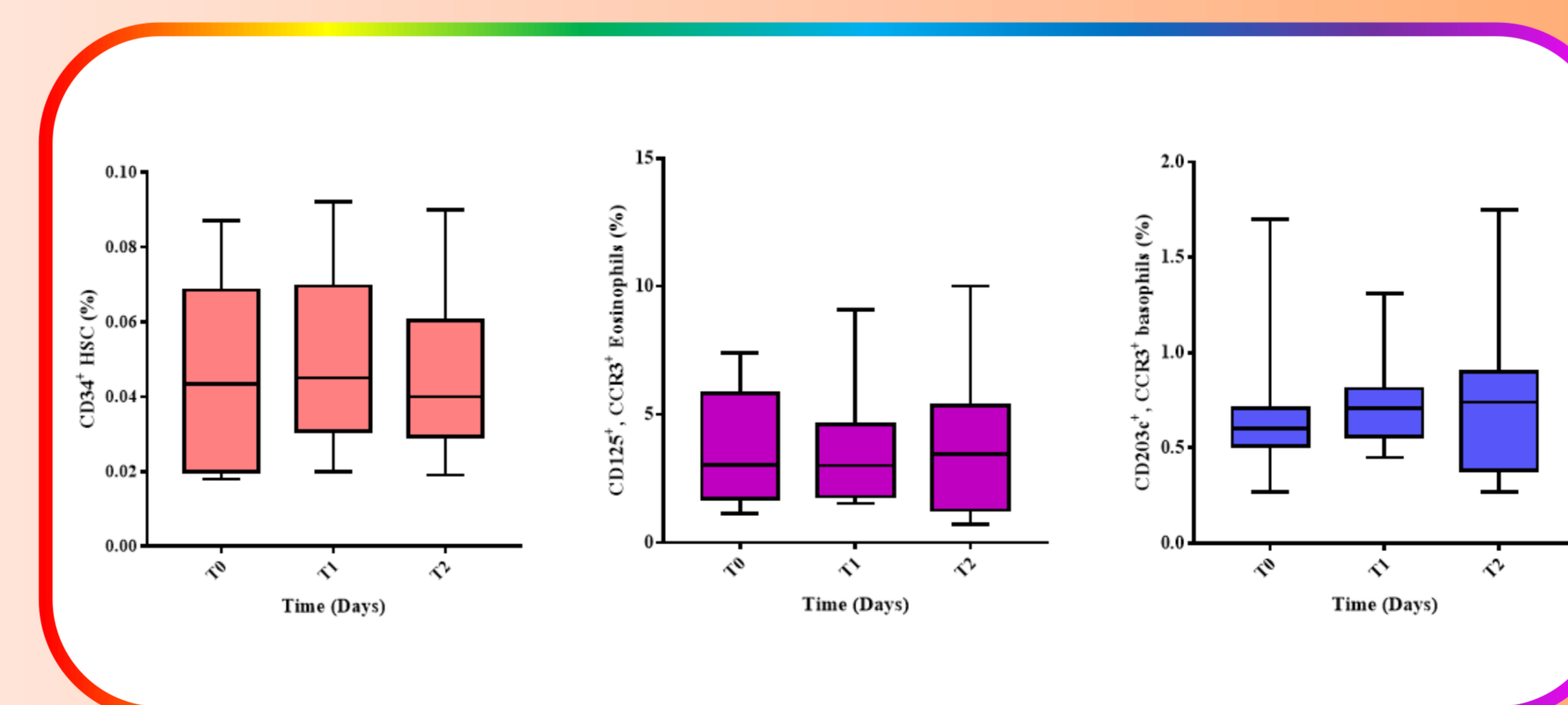


Figure 3. No differences were determined in the number of unstimulated cells, as well as in the number of HSC, at T1 and T2.

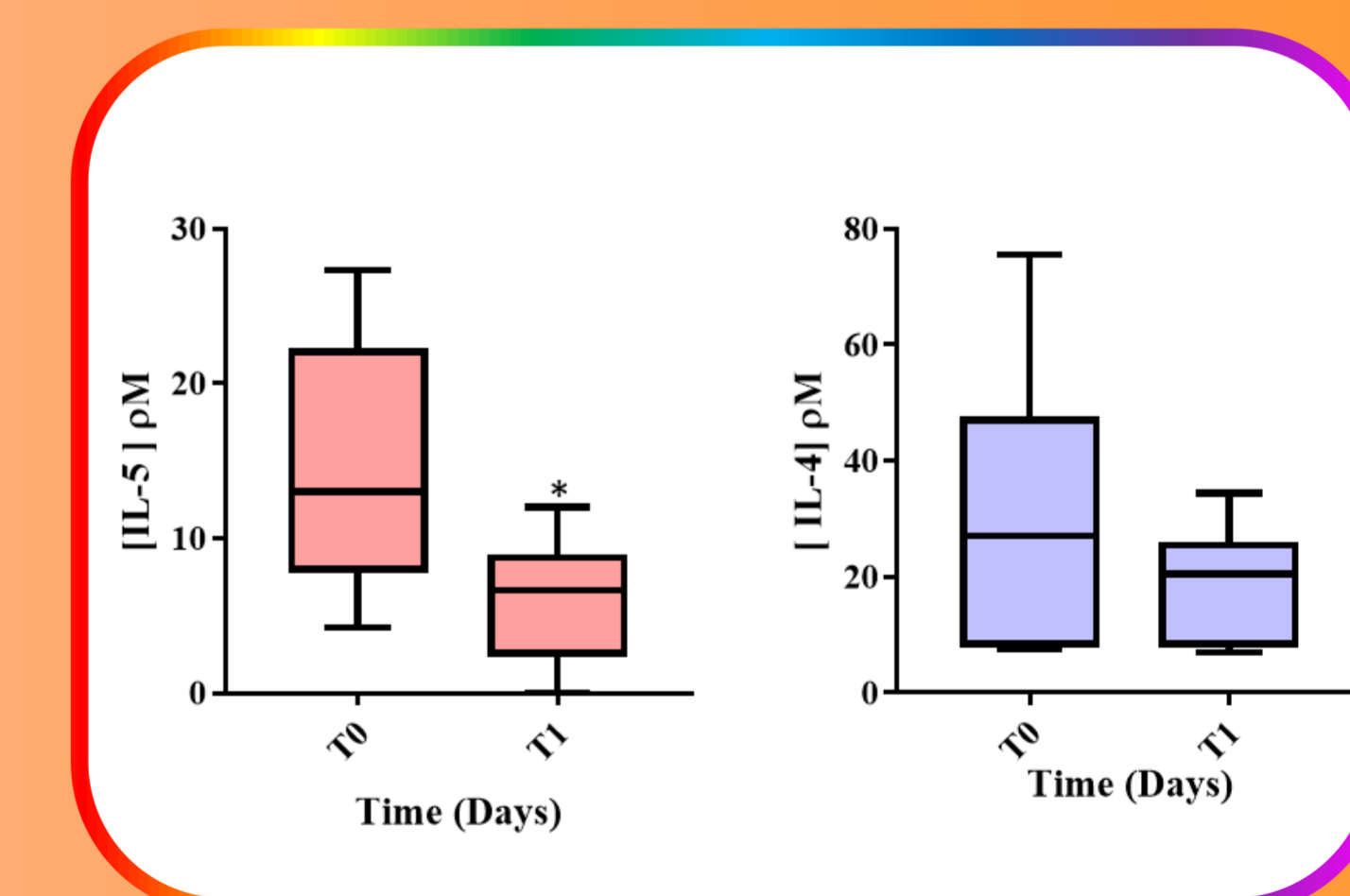


Figure 4. A decrease in the serum levels of IL-5 ($d = -8.375$; $P < 0.05$) and IL-4 was measured at T1.

iPROB® treatment induced a measurable clinical efficacy on the quality of patient life with a significant reduction in the ARTSS clinical indexes ($d = -10.5714$, $P < 0.05$) and VAS ($d = -2.00$, $P < 0.02$) at T1

CONCLUSIONS

- Our preliminary data suggest that iPROB® supplementation can significantly reduce the perception of disease by improving the quality of life of patients.
- These results significantly correlate with a reduction in the percentage of activated eosinophils and basophils, and in the serum levels of IL-5 and IL-4 at T1.
- The biological effects do not persist at the end of probiotic supplementation⁴.

REFERENCES

1. Prokopakis E., et al. Int. J. Pediatric Otorhinolaryngol. 2013; 77(7):1065-71
2. Sullivan A., et al. Respir. Res. 2016 Dec 5; 17(1): 163.
3. Lloyd-Price J., et al. Gen. Med. 2016; 8:51
4. Sanchez B., et al. Mol. Nutr. Food Res. 2017; 61, 1, 1600240