



HP-44: An immunosuppressive agent in immunopotented rats

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Subject description: The central role of the neuroimmuno-endocrine regulation loop in cyclosporine-related disorders suggests that this pathway could be targeted to reduce the side effects of the drug.

Objectives: We investigated the potential of sound conditioning to mimic the effects of cyclosporine on male rats immunostimulated with Bacillus Calmette-Guérin (BCG).

Methods: Animals were administered cyclosporine (20 mg/kg) alone or associated with sound noise for eight days, followed by injections of BCG on day 9 and a reminder on day 27.

Results and discussion: Our results show that intraperitoneal injection of cyclosporine alone caused a significant decrease in testosteroneemia associated with a drop in body weight, as previously reported. Interestingly, sound conditioning alone also caused a significant decrease in testosteroneemia and body weight, mimicking the effects of cyclosporine. However, cyclosporine and sound conditioning combined did not enhance this effect. Conversely, both cyclosporine and sound conditioning caused a significant increase in adrenocorticotrophic hormone (ACTH), suggesting that sound conditioning could be used as a non-pharmacological alternative to cyclosporine.

Conclusion: This study provides a proof of concept that sound conditioning could be used to modulate the neuroimmuno-endocrine regulation loop and reduce the side effects of immunosuppressive drugs.

Keywords: sound conditioning, cyclosporine, side effects, neuroimmuno-endocrine regulation loop, BCG