

RHINO ZYN®



Probiotic Solution for Allergic Rhinitis

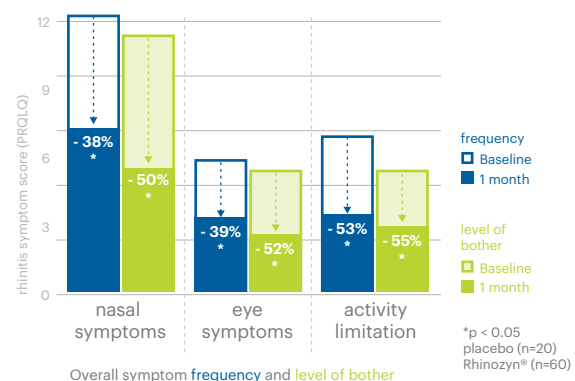
Key marketing aspects

- > targeting the most frequent allergic disease
- > unique combination of patented probiotic strains selected for the treatment of allergic rhinitis and for restoring the allergic immune system
- > plus vitamin D – health claim related to the normal function of the immune system and inflammatory response (EU No 432/2012)
- > reducing both eye and nasal symptoms in perennial rhinitis
- > improving quality of life during allergy season (even in subjects using pharmacotherapy)
- > natural alternative to pharmacotherapy or add-on to antihistaminic
- > clinically tested in children & adults
- > most efficient probiotic solution available for the treatment of allergic rhinitis
- > pharmacy exclusive

Facts

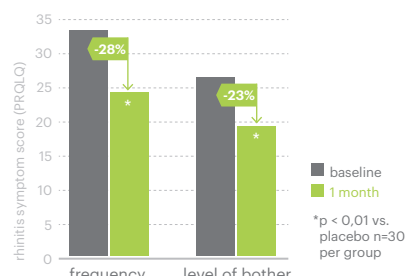
- > 3 randomized clinical trials published reporting improvements in a total of 305 subjects treated
- > significant reduction of clinical symptoms of perennial rhinitis^{1,2}
- > compelling improvement of quality of life (RQLQ) in seasonal rhinitis³
- > stimulating the Th1 immune response and reducing IgE synthesis⁶
- > vitamin D modulates the immune response and is associated with aeroallergen sensitization and allergic rhinitis⁴
- > highest clinical efficacy amongst probiotic treatments for allergic rhinitis⁷

Reducing rhinitis associated symptoms²



Source Wang et al. (2004), *Pediatr Allergy Immunol*

Improving quality of life¹



Source Peng et al. (2005), *Pediatr Allergy Immunol*

How to use

- > once a day
- > stand-alone or add-on to pharmacotherapy



Rhinozyn® – Unparalleled Probiotic Solution for the Treatment of Allergic Rhinitis

Methods

- > meta analysis to investigate the efficacy of probiotics in the treatment of allergic rhinitis (AR)
- > Pubmed, Cochrane and Baskent Academic Search Engine served as data bases for relevant articles
- > 451 articles published till September 2015 for the past 20 years were screened
- > 22 RCTs studies with a total of 2242 participants were included in the meta analysis
- > outcome measures were nasal and ocular symptom scores and quality of life questionnaires

Results

- > 10 studies showed significant clinical benefits for nasal symptoms, 6 studies for ocular symptoms and 5 studies for quality of life
- > all 5 studies with *Lactobacillus paracasei* showed clinical benefits
- > mean difference (MD) over all studies for nasal symptoms is -1.23, for ocular symptoms -1.84 and for quality of life -1.84
- > Rhinozyn® containing *Lactobacillus paracasei* LP-33 is able to reduce nasal symptoms by -3.3 (MD), ocular symptoms by -5.89 (MD) and quality of life scores by -3.97 (MD)
- > all clinical studies with Rhinozyn® demonstrate significant higher improvement of nasal and ocular symptoms as well as quality of life than all other probiotic treatments

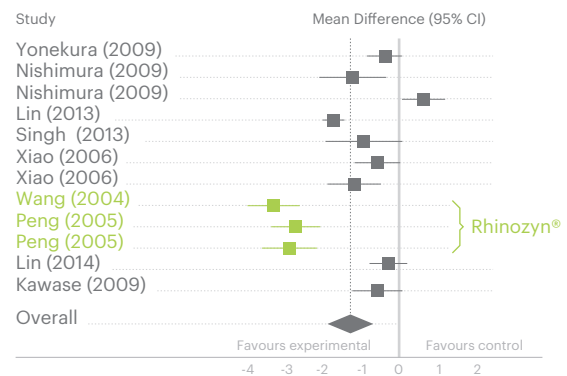
Conclusion

- > significant evidence of beneficial clinical effects of Rhinozyn® in the treatment of allergic rhinitis
- > adjunctive therapy with Rhinozyn® can be recommended for the treatment of allergic rhinitis
- > meta analysis proves Rhinozyn® to be the leading probiotic treatment for allergic rhinitis

References

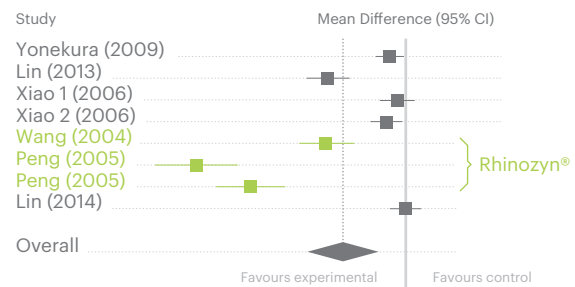
1) Peng et al., *Pediatr Allergy Immunol* (2005), 2) Wang et al., *Pediatr Allergy Immunol* (2004), 3) Costa et al., *Eur J Clin Nutr* (2014), 4) Aryan et al., *Int Rev Immunol* (2017), 5) Mutgi & Koo, *Pediatr Dermatol* (2013), 6) Hsu et al. *US 6,994,848 B2* (2006), 7) Güvenc et al., *Am J Rhinol Allergy* 30 (2016)

Nasal Symptoms



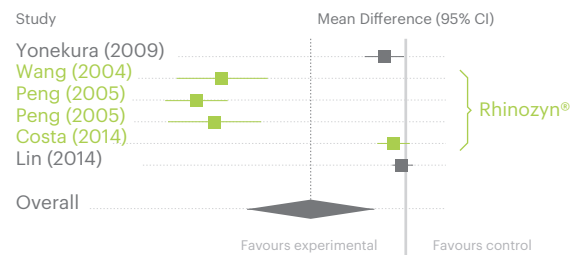
Source Güvenc et al. (2016), *Am J Rhinol Allergy* 30, e157-e175

Ocular Symptoms



Source Güvenc et al. (2016), *Am J Rhinol Allergy* 30, e157-e175

Quality of Life



Source Güvenc et al. (2016), *Am J Rhinol Allergy* 30, e157-e175