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Research Journal of Pharmacy and Technology • Volume 16, Issue 1, Pages 163 - 168 • January 2023

Document type
Article

Source type
Journal

ISSN
09743618

DOI
10.52711/0974-360X.2023.00030

Publisher
Research Journal of Pharmacy and Technology

Original language
English

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Effectiveness of Shrimp Allergenic Extract as an Immunotherapy Agent in Mice Model of Gastrointestinal Allergy

Sagitaras, Ilham Bagus[a]; Marhaeny, Honey Dzikri[a]; Pratama, Yusuf Alif[a]; Ardianto, Chrismawan[a]; Suasana, Dian[a]; Nurhan, Ahmad Dzulfikri[a]; Sari, Winda Fatma[a]; Dinina, Fakhriyah[a]; Taher, Muhammad[b]; Khotib, Junaidi[a]

Save all to author list

[a] Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia

[b] Department of Pharmaceutical Science, Kuliyyah of Pharmacy, Internasional Islamic University Malaysia, Pahang, Malaysia

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Abstract

Allergen extract as allergen-specific immunotherapy (AIT) is the only causative therapy and provides protection or tolerance to an allergen in the long term. However, allergen extracts from different countries may have different effectiveness . This study aimed to evaluate the effectiveness of Indonesian shrimp allergen extract (SAE) as an immunotherapy agent with a mouse model of allergies in the gastrointestinal tract. Mice were divided into five groups consisting of the naïve group, allergic group, and the allergic group received SAE immunotherapy at high dose (100µg/week), moderate dose (50µg/week), and low dose (10µg/week). Each group received treatment in the sensitization and desensitization phases, which was then followed by an oral challenge of SAE 100µg. The effectiveness of SAE immunotherapy was assessed based on the parameters of systemic allergic symptoms, IL-10 mRNA expression in ileum tissue, and IgG2a serum concentration. We found that SAE immunotherapy decreased the systemic allergic symptoms score, regardless of dosage, and the effect persisted on the third challenge. IgG2a as a parameter of humoral immunity showed a significant increase in the high-dose immunotherapy group, and IL-10mRNA expression as a parameter of cellular immunity also showed an increase in the high-dose group. Both data showed a dose-dependent manner. It can be concluded that SAE has excellent effectiveness as an immunotherapy agent and dose-dependent characteristics. © RJPT All right reserved.

Author keywords

Allergen specific-immunotherapy (AIT); Allergenic Shrimp Extract (ASE); Gastrointestinal allergy ; IgG2a; IL-10; Neglected disease

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Khotib, J.; Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia; email:junaidi-k@ff.unair.ac.id
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