

## Main allergen of bee venom for hyposensitization against bee venom allergy

Immune tolerance for bee and wasp venom

### DESCRIPTION OF TECHNOLOGY

Everyone gets stung by bees every now and then, which usually leaves a small itchy redness or slight swelling around the stinging site. For people with bee venom allergies, however, a sting can cause an anaphylactic reaction that is life-threatening. Now the main allergen apitoxin Api m10, which causes this reaction, has been identified and analysed. This main allergen can be used in a hyposensitizing agent for affected persons. This results in an improved immune tolerance against the bee venom and in case of a bee sting the dangerous reaction is weaker or does not occur at all. Since part of the allergen spectrum overlaps between bees and wasps, this agent can also be effective in wasp allergy.



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### APPLICATION FIELDS

Hyposensitization is important for people who are at increased risk of an insect venom allergy, e.g. because they are professionally involved with bees or work a lot outdoors, and also for people who have had an anaphylactic reaction in the past. Users are the manufacturers of peptide-containing solutions for specific immunotherapy (SIT) and physicians, especially allergists whose patients benefit from hyposensitization against bee and wasp venom.

### AT A GLANCE ...

#### Application Fields

- Specific Immunotherapy (SIT)
- Hyposensitization against bee or wasp venom

#### Business

- Pharma1
- Allergologists
- Beekeeper

#### USP

- Main allergen Api m10

#### Development Status

- Analysis of bee venom and identification of individual allergens
- Preparation and analysis of the peptide sequence of the major allergen Api m10
- Further clinical tests are planned

#### Patent Status

Priority application, filed on 26 September 2019 at the European Patent Office. Subsequent applications are possible and planned.

## ADVANTAGES OVER THE PRIOR ART

The peptide sequence of the main allergen apitoxin Api m10 is easily prepared and can be added with adjuvants or otherwise formulated according to standard procedures. Subcutaneous administration of an infusion solution is possible as well as needle-free injection with a lyophilized or dried administration form.

## STATE OF THE PRODUCT DEVELOPMENT

The relevant shortened peptide sequence of the main allergen apitoxin Api m10 has been identified, analysed and can be easily produced using standard synthesis methods.

## MARKET POTENTIAL

In Germany every 4th to 5th inhabitant suffers from an allergic disease. 2% of them react to insect bites with acute symptoms that is about 300.000 - 400.000 persons. Beekeepers and their relatives are particularly affected by insect allergies. A higher risk also exists for people who work in bakeries, sell fruit or are active in agriculture and outdoors, such as gardeners.

About 20 deaths per year are reported in Germany due to allergic reactions to bee, wasp and hornet stings. The actual number is probably somewhat higher, as allergic reactions are not always recognised as the cause of death. The incidence of anaphylactic reactions to insect bites is reported by professional societies to be about 1:200 per year.

## COOPERATION OPPORTUNITIES

On behalf of its shareholder Justus-Liebig-University of Gießen, TransMIT GmbH is looking for cooperation partners or licensees for the production or further development in Germany, Europe, the USA and Asia.

## A TECHNOLOGY OF



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