

#### MONOCLONAL IMMUNOGLOBULINES IgE AND IgG AND HYBRIDOMA TO PRODUCE THE SAME, FOR THE DIAGNOSIS AND IMMUNOTHERAPY OF HYPERSENSITIVITY REACTIONS

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# ABSTRACT

The present development refers to the production and characterization of murine monoclonal antibodies produced by the hybridoma technology, especially one of the isotype IgE and 2 of the isotype IgG and its use in the diagnosis to determine type I hypersensitivity reactions and crossed allergic reactions.

### STAGE OF RESEARCH

The recognition of the antibodies by the profilins that cause the allergic reaction has been verified. The production of the antibodies has also been generated and controlled from the corresponding hybridoma, which has remained viable and it has been deposited with the corresponding international authority. Likewise, the corresponding antibody has already been ordered to be sequenced.



### BACKGROUND

Deposit of biological material: CM-CNRG TB48 (Hybridoma with certificate of deposit and declaration of viability, submitted to the National Center for Genetic Resources of the National Institute of Forestry, Agriculture and Livestock Research (INIFAP))

## APPLICATIONS FIELDS

Profiling are a family of small proteins that are also important allergens present in pollen grains, plant foods, fruits and rubber tree latex and is considered a pan-allergen since it is present in all eukaryotic cells and is therefore involved in cross allergenicity reactions.

Considering the significant increase in allergies in recent years, the present development proposes a new effective diagnostic tool and an immunotherapy strategy for conditions such as pollen-latex-food syndrome, by using the hybridoma technology for the production of murine monoclonal antibodies of the IgE and IgG isotype that recognize profilins of plants and foods, causing allergies. The new murine monoclonal antibodies proposed in the present invention can be used in a variety of processes, such as identifying allergenic profilins in any food, pollen or fruit.

#### **ADVANTAGES**

The allergenic profilins rHev b 8 (rubber tree) and rZea m 12 (corn) represent an important example of cross-reactivity in the latex-pollen-fruit syndrome. To understand the allergen-antibody interactions and how these can affect the hypersensitivity reactions, in the present development a murine IgE monoclonal antibody (mAb 2F5) was generated that specifically recognizes the rHev b 8 allergen from a hybridoma. It also refers to new murine monoclonal antibodies of the IgG isotype, which can be used in a variety of processes, such as identifying allergenic profilins in any food, pollen or fruit. From the research point of view, IgE obtained from this hybridoma can be used to study the phenomenon of degranulation of basophils through its interaction with high-affinity receptors FcER1.

In another area, the development is also applied in the diagnosis of allergy to pollen, fruits, latex involved in cross-reactivity, to prevent undesirable responses in individuals with specific allergy to profilin.