Modulation of three-dimensional structure and research of folding-analoges of AMB A 6 allergen of *Ambrosia artemisiifolia*

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Introduction

Amb A 6 allergen of *Ambrosia artemisiifolia* is a ragweed allergen (a principle cause of late summer hayfever in North America and Europe) (Hiller et al. 1998). The weed has recently become spreading as a neophyte in Europe, while climate change may also affect the growth of the plant and additionally may also influence pollen allergenicity (Kelish et al. 2014). In Ukraine, the number of diseases caused by this allergen has recently increases. The three-dimensional structure of Amb A 6 allergen is undescribed.

The aim of our study was to modulate of three-dimensional structure and search of folding-analoges of AMB A 6 allergen of *A. artemisiifolia*.

Material and Methods

Template search with Blast and HHBlits has been performed by the SWISS-MODEL template library. Models are built based on the target-template alignment using ProMod3. Coordinates which are conserved between the target and the template are copied from the template to the model. Insertions and deletions are remodelled using a fragment library. Side chains are then rebuilt. Finally, the geometry of the resulting model is regularised by a force field. In case loop modelling with ProMod3 fails, an alternative model is built with PROMOD-II (Guex and Peitsch 1997).

Results and Discussion

Three-dimensional structure of Amb A 6 allergen has been built (fig. P24.1).

As folding-analoges of AMB A 6 allergen the maize nonspecific-lipid transfer protein was found.
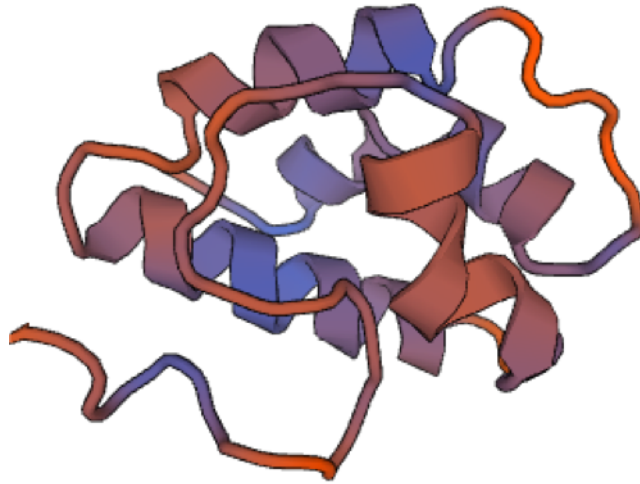
Figure P24.1: Three-dimensional structure of Amb A 6 allergen.

Information about three-dimensional structure and partial analogy with nonspecific-lipid transfer protein can help to understand properties and spatial configuration of Amb A 6 allergen.

References

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