

Work package 1: Synthesis of nanofiber derived from low molecular weight peptidomimetics. Inclusion of biologically active agents in the obtained nanofibers

Start and end of the work package: Months 1 - 12; Months 19 - 27; Month 34 - Month 36

Work package leader: Assoc. Prof. Daniela Tzekova

Participants in the implementation of the work package:

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Planned tasks:

Task 1.1 Synthesis and characterization of low molecular weight compounds derived from amino acids that exhibit the property of self-organization.

Deliverable

Preparation of low molecular weight compounds derived from amino acids. Some of them have already been synthesized (N, N / -Bis (N-nicotinoyl-L-valyl) diaminohexane; N, N / -Bis (N-decanoyl-L-Asparagyl) diaminohexane), while others are new, such as the silver salt of N, N / - Bis (N-decanoyl-L-Asparagyl) diaminohexane and other, new compounds that may need to be prepared in the course of work.

Task 1.2 Synthesis of nano- and microfibers by self-organization of low molecular weight peptidomimetics obtained in Activity 1.1.

Task 1.3 Characterization of the obtained supramolecular complexes and optimization of the parameters of the thus obtained nanofibers

Deliverable

The properties of the formed fibres with nano- and micro-sizes will be characterized, to get an idea of the potential possibilities of the obtained supramolecular complexes to be loaded with biologically active agents (Ag, TDZ, IAA). A series of experiments with changes in the conditions for self-organization is planned to select the appropriate ones for future experiments.

Task 1.4 Determining an appropriate approach for loading biologically active agents (Ag, TDZ, IAA) on nanofilaments.

Deliverable

Complexes will be obtained which will contain biologically active agents (Ag, TDZ, IAA), which will be released for a long time and in effective concentrations in the *in vitro* plant propagation system.

Task 1.5 Determination of kinetics of release of biologically active agents in the solutions used.

Task 1.6 Preparation of a scientific and financial report on the work performed under the Work Package, Processing of the obtained results and their formation in materials for participation in Scientific Forums and preparation of an article in an international scientific journal indexed in Web of Sciences or Scopus

Deliverable

With the results obtained under this Work Package, we will take part in a scientific forum, and scientific and financial reports will be prepared