

## Method for producing large amounts of dsRNA for use as a pesticide

### DESCRIPTION OF THE TECHNOLOGY

CSIC and the UPV have developed a new method that allows producing large amounts of double stranded RNA (dsRNA) in *E. coli* that can be used for gene silencing against pests and pathogens. The ingestion of dsRNAs by nematodes, insects and other arthropods induces the silencing of homologous genes, causing their death or affecting their development, mobility or feeding behavior and reducing in any case the damage they cause. Its use has also been demonstrated against viruses and fungi. In this way, RNA, a natural compound that is harmless to the environment, has become a promising agent against pests and pathogens.

For use as pesticides, it is necessary to have a

method that produces large amounts of dsRNA quickly. For this reason, biofactories such as *E. coli* are used.

This new method employs a gene construct that allows incorporating a sequence of the gene of interest to be silenced. In addition, it incorporates autocatalytic introns (they disappear during processing) that allow double-stranded RNA to be obtained, significantly improving the prior techniques for obtaining this type of molecules.

The system allows rapid adaptation to new pests or pathogens that may appear, since it can be easily modified according to needs.

### MARKET APPLICATION SECTORS

Agriculture.

### TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- This method allows to obtain large amounts of dsRNA in a fast and economical way.
- System easily adaptable to new needs that may arise against new pests.
- It allows obtaining dsRNA of 100 base pairs.
- Remarkably improves previously used techniques.
- The use of dsRNA as a pesticide is harmless to the environment.
- Highly specific system against the pathogen or pest of interest.

### CURRENT STATE OF DEVELOPMENT

Priority patent application filed suitable for international extension.

### COLLABORATION SOUGHT

Industrial partners dedicated to agricultural sector are being sought to collaborate through a patent licence agreement.

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### RELATED IMAGES



Image 1.

### CONTACT

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