

New system to modulate the degree of silencing of a gene of interest in plants

DESCRIPTION OF THE TECHNOLOGY

CSIC and UPV have developed a system that allows modulating the degree of silencing of any gene that is of interest in plants. Until now, the technologies used to regulate gene expression in plants only allowed to induce a high degree of silencing, but the level of silencing had not been regulated.

This new system, through the use of small artificial RNAs (sRNAs), modulates the degree to which gene silencing occurs. This technology has a special interest in the case of wanting to silence a lethal gene and, for example, when the gene that is silenced is regulating the flowering time.

This system, through several approximations, allows a fine modulation of the degree of silencing

of the desired gene. Producing a silencing in the desired degree, in an efficient and reliable way.

A clear example of its applicability is in the case that the gene of interest is regulating the flowering of the plant, such as the FT gene. Through this system we can generate varieties that flourish in different seasons and thus ensure production throughout the year.

Until now it was not possible to modulate gene expression using sRNAs, opening up a whole new range of possibilities for the development of crops of agronomic interest.

MARKET APPLICATION SECTORS

Agriculture.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Modulator system that allows fine regulation of gene expression.
- There is no system known to date that allows to regulate gene expression through the use of sRNAs.
- It allows the gene silencing of lethal genes.
- Possibility of regulating the gene expression of genes that affect the characteristics of crops of economic interest.

CURRENT STATE OF DEVELOPMENT

Patent application filed.

COLABORATION SOUGHT

Companies interested in the license of the patent for development and use of the device are being sought.

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Image 1. Obtaining Arabidopsis plants with different flowering times using different degrees of gene silencing.

CONTACT

Instituto de Biología Molecular y Celular de Plantas
Alberto Carbonell Olivares
acarbonell@ibmcp.upv.es
Ingeniero Fausto Elio, s/n
46022 – Valencia