



## EPIXCHANGE Result In Brief

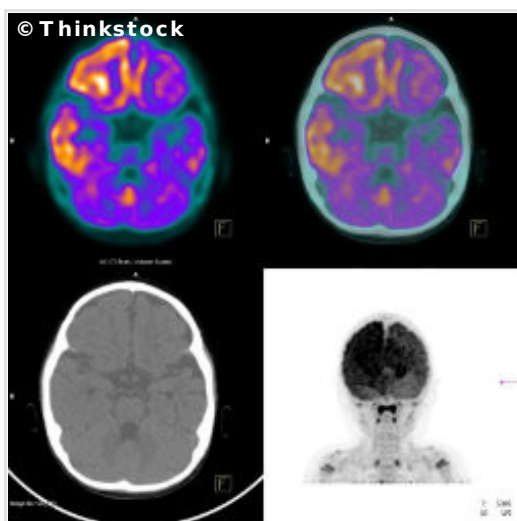
Project ID: 285827

Funded under: FP7-PEOPLE

Country: Italy

### Gene therapy for epilepsy

**Gene and cell therapy are emerging as novel alternatives to existing treatments. A European consortium is evaluating the implementation of such innovative approaches for the treatment of epilepsy.**



Epilepsy is a chronic neurological condition characterised by seizures. Depending on the affected area of the brain, epilepsy can be subcategorised into generalised or partial. Unfortunately, in almost 40% of the cases current medications fail to treat seizures, indicating a need for novel therapies.

The EU-funded 'Innovative gene therapies for epilepsy treatment' (EPIXCHANGE) project proposes to address this issue by developing unconventional therapies for the treatment of epilepsy. These strategies entail either the administration of encapsulated cells or viral vectors for the delivery of therapeutic factors.

So far, scientists have generated cell lines that produce and release neurotransmitter molecules capable of stopping epileptic seizures. These cells have been encapsulated for delivery to the epileptic brain, and their efficacy is currently being investigated in experimental models. Viral vectors capable of modulating the local expression of various factors are also being evaluated. The outcome of these pre-clinical studies will form the basis for future clinical trials in humans.

During the first part of the project, two workshops were organised one on 'Animal model of epilepsy' and the other on 'EC project management'. Additional workshops took place in the second year of the project with focus on the safety of gene and cell therapy products and on gene transfer in the CNS. Distinguished speakers attended to present the latest advancements in gene and cell therapy for neurological diseases.

Dissemination of the project activities through the website, social media and local media coverage raised public awareness regarding the hot topic of gene therapy in CNS. Special oral- and lab-based presentations to local high-school students was a further step to communicate the importance of research to society.

### Related information

#### Report Summary

[Periodic Report Summary 1 - EPIXCHANGE \(Innovative gene therapies for epilepsy treatment\)](#)

### Subjects

[Industrial Manufacture](#)

### Keywords

Gene therapy, epilepsy, viral vectors, encapsulated cells

Retrieved on 2016-12-29

Domain: Biology, Medicine

**Last updated on** 2015-03-10

**Permalink:** [http://cordis.europa.eu/result/rcn/157774\\_en.html](http://cordis.europa.eu/result/rcn/157774_en.html)

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