

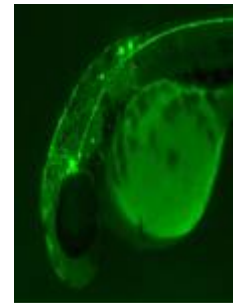
Patent: The Sox F gene of *Drosophila*: its activity as a tumour suppressor and its applications

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Description

The invention is in the field of **gene therapy** and is especially aimed at the **tumour suppressor function of the Sox F gene of *Drosophila***, and at its interaction and that of its products with the Wnt wingless (wg) pathway in this organism, required for the proliferation of intestinal epithelial cells in mammals, whose aberrant activation causes intestinal neoplasia.



This is how **new genes could be identified**, by means of genetic screening, which can reverse **the over-proliferation of the Sox gene mutation** and can be used for **designing new anticarcinogen strategies**, for **diagnostic and therapeutic applications, and for research on compounds**.

Need or problem solved

The invention is in the field of **gene therapy**. The applications resulting from this invention can be:

- **Identification of new genes, by means of genetic screening**, which can reverse the over proliferation of the Sox F mutation. The identified genes can be used for the design of new anticarcinogen strategies.
- **Proving the effect of drugs** upon over proliferating fly-wing hinge cells. The mutant Sox F cells of the hinge region can be used in pre-clinical phases of anticarcinogen drug trials. This could become a fast and economical method of performing a **pre-selection of drugs prior to their trial in mammals**.
- **Cell culture of Sox F mutant cells**. This invention can lead to the establishment of a cell line specifically derived from hinge cells and of a specific tumour cell line derived from the latter.
- **Blocking the proliferation of carcinogen cells through the administration of the protein**. The gene-coded protein, or its coding messenger RNA, can be used for blocking cell proliferation by transfecting them in a mutant human cell line. This could bring about an effective blockage of cell proliferation.

Innovative issues/Competitive advantages

Considering that, at a molecular and cellular level, there is a high degree of conservation between *Drosophila* and humans, the identified genes that can interact with Sox F will be good candidates for modulating the Wnt-controlled cell proliferation through interaction with the human homologues of Sox F.

Types of interested companies

- Units performing cancer research
- Genetic laboratories
- Pharmaceutical companies
- Biotechnological companies