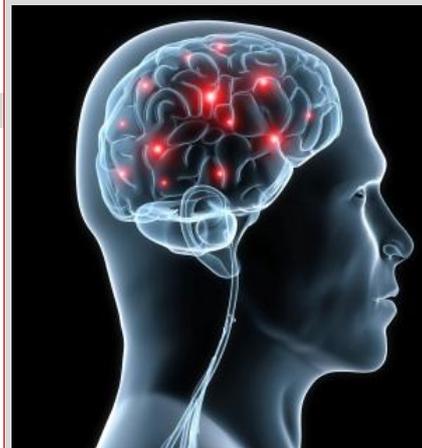


**A method and compositions for the treatment of brain metastasis from cancer, preferably from breast cancer or from lung cancer****BACKGROUND**

A brain metastasis is a secondary tumor induced by cancer cells that have migrated to the brain from another location in the body. Many tumor or cancer types can spread to the brain, being lung cancer and breast cancer among the most common sources of brain metastases. Metastatic brain tumors occur in about 25% of all cancers that spread through the body and are much more common than primary brain tumors. The treatment of brain metastasis remains challenging. Whole brain radiation therapy (WBRT) is the standard treatment for patients with multiple brain metastases or with a life expectancy of less than three months. Side effects of WBRT can include memory loss, extreme fatigue, confusion, lack of coordination or even dementia. Surgical resection of the tumor prolongs survival only in patients having a single lesion in an area of the brain where it is safe to operate. Chemotherapy has not been extensively studied for brain metastasis as is generally less efficient than surgery or radiation. Corticosteroids or steroids are administered to reduce edema, however side effects from steroids can be very serious. Effective and well tolerated therapy for brain metastasis remains an unmet medical need.

**THE TECHNOLOGY**

Currently brain metastasis of cancer of any type is a serious complication due to the complexity of the brain and the fact of the existence of the blood-brain barrier that prevents many drugs on arrival. Based on computational methods, particularly network analysis of interactions between molecules, we have identified a number of possible therapeutic targets. These targets have been crossed computationally with a battery of known drugs following structural criteria and we have identified targets for drug candidates. Subsequently, we have developed some experiments with candidates and we have identified compounds for the treatment of metastatic brain cancer, preferably breast and lung.

**COMMERCIAL OPPORTUNITY**

The rights of this technology had been already assigned.

**ADVANTAGES**

- Lack of adverse events of the drugs.
- Method applicable to other cancers and metastasis.

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**STATE OF DEVELOPMENT**

The method has been tested both *in vitro* cells and *in vivo* with positive results. Further steps should be the development of regulatory preclinical assays.

**KEYWORDS**

Breast cancer, lung cancer, brain metastasis, re-profiling.

**INTELLECTUAL PROPERTY**

The Intellectual Property Rights have been transferred to Dr. Àngels Sierra Jiménez.

**MARKET OPPORTUNITY**

According to Cancer Research UK, an estimated 1.61 million people across the world were diagnosed with lung cancer (13% of the total) and 1.38 million women with breast cancer (23% of all women cancers). In the same year an estimated 1.38 million deaths (18% of total) were attributed to lung cancer and 460.000 deaths to breast cancer.

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