

L1- Δ TM: New circulating bio-marker of tumor angiogenesis

Introduction

Growing tumors stimulate the formation of new blood vessels to supply the oxygen and nutrients the cancerous cells need to stay alive. Stopping tumors from forming the blood vessels could therefore help us to treat cancer. Similarly, the identification of **specific markers of tumor angiogenesis** would significantly facilitate the clinical management of cancer patients, from the diagnosis to the monitoring of tumor progression and treatment response.

Medical Need

Current strategies for cancer diagnosis mainly rely on solid biopsies. The extraction of a solid tissue from the affected area allows to study specific biomarkers and the genetic nature of the tumor. However, this procedure is risky and painful for patients and cannot be applied repeatedly to monitor tumor evolution. Moreover, tissue extraction is unavailable in inaccessible tumors. Therefore, it is fundamental to identify **non-invasive and specific biomarkers** whose detection has **no risk for cancer patients** and may provide a better insight into tumor progression.

Solution

The inventors have identified a new soluble isoform of the adhesion molecule L1CAM, called L1- Δ TM, which is released by endothelial cells into the blood circulation and promotes angiogenesis. L1- Δ TM is up-regulated in the tumor vasculature of the ovarian carcinoma and in other types of solid tumors whose blood vessels show high expression of L1CAM, compared to healthy tissues. The invention concerns the **use of L1- Δ TM as a circulating bio-marker of tumor angiogenesis** for both the diagnosis and prognosis of solid tumors. Detecting L1- Δ TM in the blood of cancer patients will allow to identify patients who are eligible for anti-angiogenic treatments and to monitor the effectiveness of such treatments.

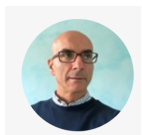
Advantages

- Detection in a biological fluid sample such as peripheral blood;
- Diagnosis does not require invasive biopsy procedures;
- Procedure for diagnosis/prognosis can be applied to different solid tumors;
- Concentration of the bio-marker does not change according to physiological conditions.

Opportunity

Istituto Europeo di Oncologia is seeking an industrial partner willing to co-develop or support the development of a **non-invasive assay detecting L1- Δ TM** for the diagnosis and therapeutic monitoring of cancer patients.

Principal Investigator



Ugo Cavallaro, PhD

Gynecological Oncology Research Unit Director at IEO

- Expert in the biology of ovarian cancer
- Great experience in the generation of clinically relevant experimental models

Project in collaboration with Dr. Claudia Ghigna at the Institute of Molecular Genetics (IGM-CNR).

References

Patent Application: IT-102018000007726.