

TECHNOLOGY OFFERS

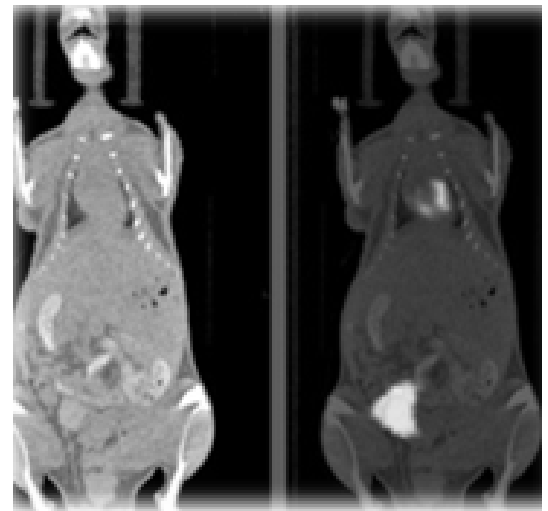
Disrupting metastases: A novel peptide translates concomitant tumor resistance

Therapeutic recombinant protein to suppress metastatic outgrowth

EXECUTIVE SUMMARY

Cancer is responsible for the majority of deaths in high income countries. Most cancer patients die as a result of the formation of macro-metastases. Despite the clinical relevance, the pathomechanisms of metastatic outgrowth are still poorly understood. Different studies indicate that primary tumors can inhibit secondary malignancy formation in mice and men. This phenomena has been termed '*concomitant tumor resistance*' (CTR). Yet, up to now this could not be translated successfully into therapy.

We identified in an unbiased *in-silico* meta-analyses of >5000 patient samples a protein which supports the concept of CTR in terms of contextuality, as it - depending on its proteolytic cleavage - enhances primary tumor growth and inhibits metastases formation. We prove that a fragment of this protein predominates in the systemic circulation of healthy control and stable tumor patients. In a plethora of *in vitro*, *ex vivo* and *in vivo* studies the function of this fragment was unraveled and assessed as major inhibitor of metastasis formation. Further, we generated this peptide recombinantly and used it in different therapeutic settings in murine metastasis models. Here, the peptide potently inhibited metastasis formation and enhanced overall survival. Thereby, the biomolecule referring to the present invention shows immediate therapeutic potential in various metastatic cancer types.



Category

Therapeutic

Indication

Metastatic
cancer

Development stage

in vivo POC

Seeking

Development partner /
licensee

BENEFITS

- State of the art treatments do not mediate long-term curative benefits against metastases formation and progression.
- Takes advantages of a better understanding of concomitant tumor resistance.
- Endogenous biomolecule with immediate therapeutic potential.
- Inhibits metastasis formation at different steps of the metastatic cascade.
- As naturally occurring molecule in the systemic circulation the expectable side-effects should be manageable.

INTELLECTUAL PROPERTY

Relevant patent applications have been filed and are pending.

For more information, which could be provided under a confidentiality agreement, please contact:

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ABOUT THE DKFZ OFFICE OF INNOVATION MANAGEMENT

Working at the interface of research and industry, Innovation Management of the German Cancer Research Center (DKFZ) helps to get new cancer medications, diagnostic tests, and research instruments onto the market as quickly as possible.

The DKFZ with its more than 3,000 employees is the largest biomedical research institution in Germany. At the Center more than 1,300 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg.