



The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

**A NOVEL PEPTIDE (TCP-1) TARGETING TUMOR BLOOD VESSELS
FOR ANTI-CANCER DRUG DELIVERY AND CANCER DIAGNOSIS**

CUHK Ref. No.:

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Patent Status:

US Patent Pending

Licensing Status:

Available for licensing

Inventor(s):

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Non-confidential abstract:

Researchers at The Chinese University of Hong Kong (CUHK) have developed a promising new lead in the ongoing fight against cancer. Their invention comprises a novel substance that selectively binds to cancer tumours, allowing targeted delivery of drugs or diagnostic markers with pinpoint accuracy.

Peptide Technology

The new carrier substance is a peptide, a small protein-like molecule consisting of a short sequence of amino acids. Certain peptides have the capability to bind strongly and specifically to biochemical targets within the body. Although the new peptide has no known biological function of its own, it can be used as a carrier to transport active molecules to the target site — providing functionality such as programmed death of cancer cells via drugs, or imaging capability for diagnostic purposes.

One Step Towards the Magic Bullet

Despite many years and millions of man-hours spent on researching cures for cancer, survival rates for most sufferers remains disappointingly low: typically, only around half of all sufferers are still alive five years after diagnosis. Early diagnosis provides a huge advantage to clinicians and greatly enhances the likelihood of recovery. This new peptide can support early, accurate and non-invasive diagnosis by enabling doctors to image tumours, especially those of colorectal and gastric cancers.

Once a patient is confirmed as having cancer, the peptide can be used to transport chemotherapy drugs to the target site for destruction of the cancer. Such targeted delivery means that much smaller doses may be used, leading to milder and less distressing side effects.

No Resistance

Because the peptide binds to the tumours' system of blood vessels, it is unlikely that the cancer could develop resistance to the peptide. This is because the rate of evolution of blood vessel systems in the body is slow. Other types of drugs, such as chemotherapies, can quickly become useless because the target cancer cells — for example can evolve rapidly to resist attack by the drug.

Development Opportunity

This new peptide, developed by a state-of-the-art screening method, has shown great promise and effectiveness in laboratory and animal tests. Moreover, the peptide is easy and relatively inexpensive to manufacture using well-established technology. It represents a compelling opportunity for preclinical development of a promising new cancer therapy and diagnosis.

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