AcK-Lock
The Next Generation of Cancer Therapy
Why AcK-Lock?

Challenges for conventional cancer therapy

- Targeting specific cancers
- Achieving complete cancer remission
- Reducing side effects and increasing safety

There is an urgent need for agents that address these challenges.
What is AcK-Lock?

AcK-Lock

It’s a simple chemical modification to selectively activate chemotherapeutic agents in cancer cells.
Cancer cells: HDAC↑ CTSL↑

HDAC (histone deacetylase) and CTSL (cathepsin L) are highly upregulated enzymes in many human cancer cells. While normal cells express these enzymes at basal level.

AcK-Lock works as a substrate for HDAC and CTSL.
How to use **AcK-Lock**?

1. **Agent**
2. **Non-specific damage to normal cells**
3. **Inactive in normal cells:** "Safe-Locked"

**AcK-Lock** + **Agent** → **AcK-Lock conjugated Agent**
How does **AcK-Lock** work?

Normal cells

Inactive

“Safe-Locked”
Increased **HDAC** and **CTSL** in cancer cells lead to **highly specific activation**

Cancer cells: **HDAC**↑ **CTSL**↑
What cancer can be targeted by AcK-Lock?

- Colon
- Pancreas
- Breast
- Prostate
- Lung

Our *in vitro* studies have shown that AcK-Lock works for a wide variety of cancers.
AcK-Lock for selective cancer targeting

Signal in blue represents dead cells
Other potential applications for AcK-Lock Technology

In addition to the therapeutic applications, AcK-Lock Technology can be used to develop imaging probes for selective cancer detection.
Additional Information

**Intellectual Property Status:** International patents pending on compositions of matter and methods for cancer treatment and imaging.

**Publication:** A full scientific description of AcK-Lock Technology has been published in Nature Communications (doi:10.1038/ncomms3735).

**Current Status in Development:** In vivo proof-of-concept data available, additional cytotoxic drugs being tested and evaluated using this system.
Partnering

Our AcK-Lock platform has the potential to generate novel candidates for cancer therapy.

We are seeking strategic partners interested in accessing our AcK-Lock Technology for the treatment of cancer. We have a growing number of compounds available for partnering. We are also able to collaborate on the partners’ proprietary compounds to generate novel AcK-Locked Agents.

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