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**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**National Institutes of Health**

**Government Owned Invention Available for License: Human Antibodies Targeting Beneficial Viral Peptide in Liver Cancer**

**AGENCY:** National Institutes of Health, HHS.

**ACTION:** Notice.

**SUMMARY:** The National Cancer Institute (NCI) seeks research co-development partners and/or licensees to develop a collection of anti-CE1 antibodies for liver cancer treatment.

**FOR FURTHER INFORMATION CONTACT:** Inquiries related to this license opportunity should be directed to: Michael Pollack, Ph.D., Unit Supervisor, NCI, Technology Transfer Center, Email: *PollackM@mail.nih.gov* or Phone: 240-276-5519.

**SUPPLEMENTARY INFORMATION:** Liver cancer is the sixth most common and the third leading cause of cancer death worldwide. The most common liver cancer in adults is hepatocellular carcinoma (HCC), an aggressive malignancy with an increasing global incidence and mortality rate. The current methods for early detection, surveillance, and treatment are suboptimal. This is due to complex etiologies, demonstrating a need for more effective treatments.

Previously, NIH investigators identified a novel viral peptide antigen known as CE1. CE1 belongs to the rhinovirus and enterovirus families (NIH Ref: E-023-2024) producing a dominant humoral response associated with reduced incidence and mortality of HCC. Through phage display from a human single-chain fragment variable (scFv) phage library, NCI inventors isolated two human antibodies (B9 and B10) against the viral peptide, CE1. Human anti-CE1 B9 and B10 antibodies were constructed. These antibodies showed specific binding to liver cancer cell lines and clinical tumor tissues. They inhibited HCC tumor growth via inducting NK cell-mediated antibody-dependent cellular cytotoxicity *in vitro* and *in vivo*. These anti-CE1 antibodies have the potential as liver cancer therapeutics, either on their own or as the targeting domain of an immunoconjugate.

“This Notice is in accordance with 37 CFR § 404.4 Authority to grant licenses.”

**NIH Reference Number**: E-021-2025.

**Related Technologies**: E-023-2024.

**Product Type**: Therapeutic.

**Therapeutic Area(s)**: Gastroenterology | Oncology.

**Development Stage**: Pre-clinical (*in vivo* validation).

**Publications**: None

**Patents:** Provisional Patent filed on August 8, 2025.

**Potential Commercial Applications**:

- Development of cancer therapeutics overcoming of PD-1/PD-L1 checkpoint blockade resistance.
- Development of alternative or combination immunotherapies for checkpoint-refractory tumors.
- Preclinical screening of alternative or combination immunotherapies for checkpoint-refractory tumors.
- Evaluation of cancer therapeutic strategies for cancers with defective antigen processing/presentation or loss of MHC-I expression.
- Companion model for comparing checkpoint-resistant MC38 B2m KO tumors against checkpoint-responsive wild-type MC38 tumors.

**Competitive Advantages**:

- Uniquely models a clinically relevant checkpoint-resistance mechanism.
- Uses the MC38 colon cancer model, which is well-established and regulatorily de-risked.
- Unique model permitting the interrogation of abrogated response to anti-PD-1 and anti-PD-1 treatment.

**Collaboration Opportunity**: Licensing.

**Dated:** August 7, 2026.

**Richard U. Rodriguez**,

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