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(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/US]; 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US).

(72) Inventors: **VAN METER, Michael**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **SALZLER, Robert**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **SRIVASTAVA, Mayank**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **KUHNERT, Frank**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US).

(74) Agent: **CRIMINS, Johanna L.** et al.; Troutman Pepper Hamilton Sanders LLP, 875 Third Avenue, New York, New York 10022 (US).

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(54) Title: VIRAL PEPTIDES AND USES THEREOF

(57) Abstract: The present disclosure provides isolated peptides derived from human T-lymphotropic virus type-1 (HTLV-1), peptide-based molecules (e.g., peptide-MHC (pMHC) complexes), polynucleotides and vectors encoding the peptides or peptide-based molecules, pharmaceutical compositions (e.g., vaccine compositions), and their use for treatment, prevention, or reduction of the likelihood of HTLV-1 infection and/or HTLV-1-induced diseases. The present disclosure also provides binding moieties that bind to the peptides or peptide-based molecules disclosed herein, and their use for treatment, prevention, or reduction of the likelihood of HTLV-1 infection and/or HTLV-1-induced diseases. The present disclosure further provides methods and systems for identifying immunogenic virus-derived peptides.