

Supplementary Material

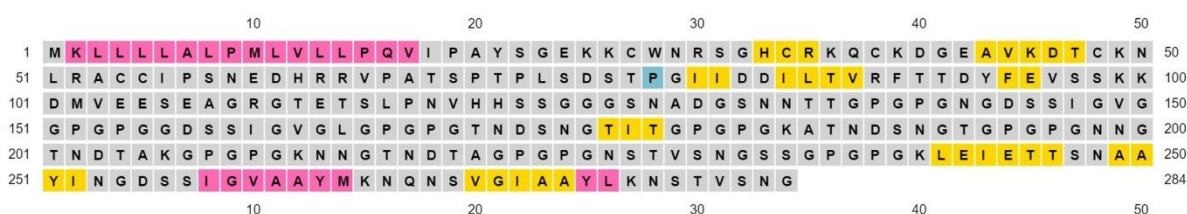
Table S1. Analysis of thermodynamic ensemble prediction of secondary mRNA structures of vaccine candidates.

mRNA Structure characterization	Vaccine 3	Vaccine 4
Free energy	-24.49 kcal/mol	-21.39 kcal/mol
Frequency of MFE Structure	0.99%	0.14%
Ensemble Diversity	55.13	51.91

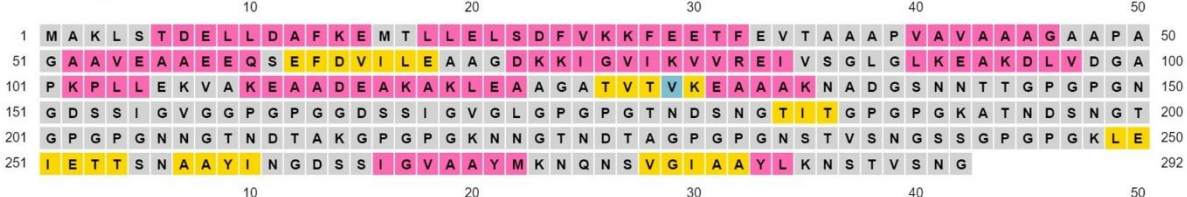
Figure S1. Secondary structure of the multi-epitope-based vaccines showing coiled, helix, and strand regions.
i. VACCINE-1, ii. VACCINE-2, iii. VACCINE-3, and iv. VACCINE-4.

Amino acid sequence of secondary structure of different vaccine candidate

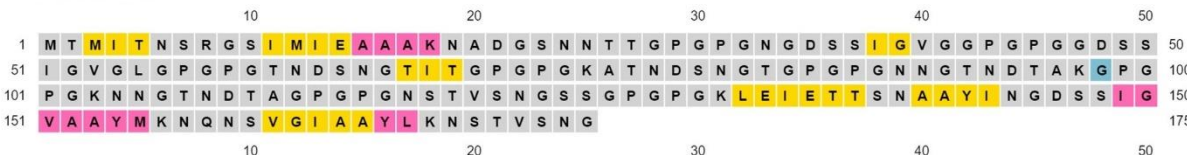
i. Vaccine 1



ii. Vaccine 2



iii. Vaccine 3



iv. Vaccine 4

