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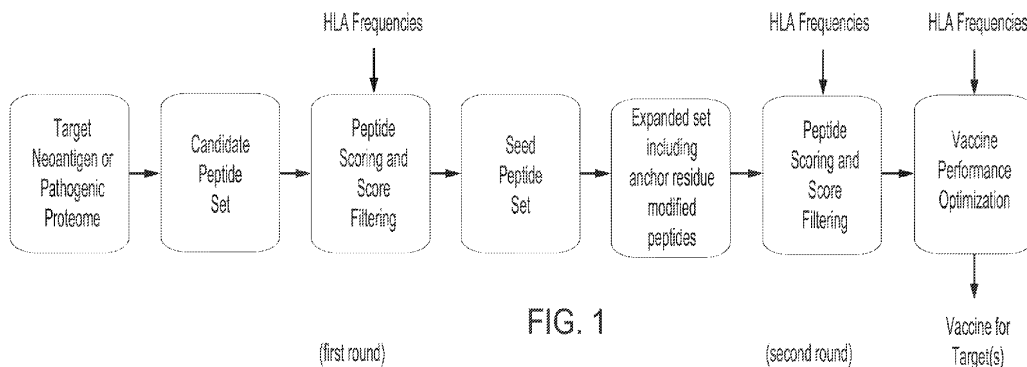
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(54) **Title:** COMPOSITIONS AND METHODS FOR OPTIMIZED PEPTIDE VACCINES



(57) **Abstract:** The present disclosure provides for methods, systems, and compositions of nucleic acid and peptide sequences. The present disclosure provides for a nucleic acid sequence encoding at least two amino acid sequences selected from the group consisting of SEQ ID NO: 1 to 6, SEQ ID NO: 8 to 10, SEQ ID NO: 12 to 28, and SEQ ID NO: 30 to 41. The present disclosure also provides for an immunogenic peptide composition comprising at least one peptide selected from the group consisting of SEQ ID NO: 42 to 65. The present disclosure provides for a composition comprising nucleic acid sequences encoding at least two amino acid sequences selected from the group consisting of SEQ ID NOs: 1550 to 1593. The present disclosure further provides for a nucleic acid sequence encoding at least one amino acid sequence selected from the group consisting of SEQ ID NOs: 1595 to 1661.

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