Parallel manufacturing of AI-predicted peptide epitopes for vaccination against the SARS-CoV-2 virus

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Fast and parallel purification of chemically synthesized peptides from in-silico or biochemical discovery processes is essential to expose their immense potential during subsequent validation studies. In this presentation, we show how machine learning algorithms can predict MHC Class I epitopes from the Sars-CoV-2 virus, which are likely to elicit a T-cell response. A selection of 96 peptide sequences with free C- and N-terminus was quickly synthesized and purified in 96-well filter plates using a safety-release purification linker. The peptides were validated using immune response assays to investigate their potential as elements of a peptide vaccine against COVID-19. The results show how catch-and-release methodologies can help to massively increase the throughput and success rate during preclinical hit-to-lead studies.