

**Supplementary Table 1:** List of MHC-I multimers used.

MCH-I allele	Peptide	Virus	Protein annotation
mouse H2-K <sup>b</sup>	TSYKFESV	VACV / MVA	B8R
mouse H2-D <sup>b</sup>	SSLENFRAYV	influenza virus	polymerase acidic protein
mouse H2-D <sup>b</sup>	ASNENMETM	influenza virus	nucleoprotein
human A*01:01	CTELKLSDY	influenza virus	nucleoprotein
human A*02:01	GILGFVFTL	influenza virus	matrix protein
human A*02:01	GLFGAIAGFI	influenza virus	hemagglutinin
human A*02:01	VLLVSLGAI	influenza virus	hemagglutinin
human A*03:01	ILRGSVAHK	influenza virus	nucleoprotein
human A*11:01	SIIPSGPLK	influenza virus	matrix protein
human B*27:05	SRYWAIRTR	influenza virus	nucleoprotein