

# SARS-CoV-2 (ORF3a) Peptide Pool

SARS-CoV-2 (ORF3a) peptide pool for immune cell activation

Catalog #100-0649

1 Unit

~25 µg (15 nmol)/peptide

## Product Description

SARS-CoV-2 (ORF3a) Peptide Pool is a lyophilized mixture of 66 peptides from open reading frame 3a (ORF3a) protein of SARS-CoV-2. ORF3a is found in both SARS-CoV and SARS-CoV-2 and the two proteins share high sequence similarity. SARS-CoV ORF3a has been shown to cause apoptosis of infected cells (Ren et al.) and form potassium-sensitive ion channels, modulating the release of viruses (Lu et al.). Additionally, it induces ligand-independent downregulation of Type 1 interferon receptor (Minakshi et al.). The sequence similarity between the two proteins suggests it may play a similar role in SARS-CoV-2. The pool consists of 15-mer peptides with 11-amino-acid overlaps that cover amino acids 1 - 275 on SARS-CoV-2 ORF3a. One unit of this product (i.e. ~25 µg/peptide) is sufficient for stimulating  $2.5 \times 10^8$  cells.

## Product Information

**Amino Acid Sequence:** MDLFMRIFTIGTVTLKQGEIKDATPSDFVRATATIPIQASLPFGWLIVGVALLAVFQSASKIITLKKRWQLALSkgVHFVCNLL  
LLFVTVYSHLLLVAAGLEAPFLYLYALVYFLQSFVRIIMRLWLCWKCRSKNPLLYDANYFLCWHTNICYDYCI  
PYNSTSSIVITSGDGTTSPISEHDYQIGGYTEKWESGVKDCVVLHSHYFTSDYYQLYSTQLSTDTGVEHVTFFI  
YNKIVDEPEEHVQIHTIDGSSGVVNPVMEPIYDEPTTTTSVPL

**Product Formulation:** Lyophilized as trifluoroacetate salts

**Source:** SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)

**Number of Peptides:** 66

**Protein ID:** P0DTC3

**Protein Name:** Protein 3a, AP3A, ORF3a

**Gene Name:** 3a

**Purity:** Average 70%

## Preparation and Storage

**Stability and Storage:** Store at -20°C. Stable as supplied until expiry date (EXP) on label.

**Preparation:** Warm to room temperature (15 - 25°C) before reconstitution. Add pure dimethyl sulfoxide (DMSO; ~40 µL) and dilute with water to the desired concentration. Final concentration of DMSO must be below 1% (v/v) to avoid toxicity in the biological system. If not used immediately, aliquot and store at -20°C. Protect from light. Avoid repeated freeze-thaw cycles.

## Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit [www.stemcell.com/cytokines](http://www.stemcell.com/cytokines) or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

## References

Lu W et al. (2006) Severe acute respiratory syndrome-associated coronavirus 3a protein forms an ion channel and modulates virus release. *Proc Natl Acad Sci USA* 103(33): 12540–5.

Minakshi R et al. (2009) The SARS coronavirus 3a protein causes endoplasmic reticulum stress and induces ligand-independent downregulation of the Type 1 interferon receptor. *PLoS ONE* 4(12): e8342.

Ren Y et al. (2020) The ORF3a protein of SARS-CoV-2 induces apoptosis in cells. *Cell Mol Immunol* 17(8): 881–3.

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