**S9 Table.** Key reagents and resources.

|  |  |  |
| --- | --- | --- |
| **REAGENT or RESOURCE** | **SOURCE** | **IDENTIFIER** |
| **Antibodies** | | |
| Human mAb 93k | This paper |  |
| Mouse mAb SG2-2E6 | GeneTex | GTX38718 |
| Rabbit polyclonal antibody 746-868 | [1] |  |
| Mouse mAb IE62 | EMD Millipore | MAB8616 |
| Mouse mAb gE | EMD Millipore | MAB8612 |
| VZV mouse mixed mAb | Meridian Life Sciences | C05108MA |
| Mouse anti-V5 tag | Bio-Rad | MCA1360 |
|  |  |  |
| Biotinylated goat anti-mouse IgG (H+L) | Vector Labs. Inc | BA-9200 |
| Donkey anti-mouse Alexa Fluor 555 | Life Technologies | A31570 |
| Donkey anti-human Alexa Fluor 488 | Life Technologies | A11013 |
| ECL Sheep anti-mouse IgG, Horseradish peroxidase linked whole antibody | GE Healthcare UK Ltd | NA931V |
| ECL Donkey anti-rabbit IgG, Horseradish peroxidase linked whole antibody | GE Healthcare UK Ltd | NA934V |
| ECL Sheep anti-human IgG, Horseradish peroxidase linked whole antibody | GE Healthcare UK Ltd | NA933V |
|  |  |  |
| **Bacterial and Virus Strains** | | |
| pOka BAC derived (pPOKA-DX) | [2] |  |
| GS1783 | [3] |  |
| pOka-TK-GFP | [4] |  |
| pOka-TK-GFP gB-STEVV5 | This paper |  |
| pOka-TK-GFP gB-TEVV5 | This paper |  |
| pOka-TK-GFP gB-TEVV5 gB[S110A] | This paper |  |
| pOka-TK-GFP gB-TEVV5 gB[Q111A] | This paper |  |
| pOka-TK-GFP gB-TEVV5 gB[D112A] | This paper |  |
| pOka-TK-GFP gB-TEVV5 gB[109AAAA112] | This paper |  |
|  |  |  |
| **Chemicals, Peptides, and Recombinant Proteins** | | |
| Anti-V5 Agarose Affinity Gel | Sigma | A7345-1ML |
| Bovine Serum Albumin (IgG Free, Protease Free) | Jackson ImmunoResearch | 001-000-162 |
| Minimal essential medium | Corning cellgro | 10-010-CV |
| F-12K nutrient mixture Kaighn’s modification | Invitrogen | 21127-022 |
| Optimem +Glutamax | Gibco | 51985-034 |
| Fetal bovine serum | Gibco | 26140-079 |
| Penicillin /Streptomycin | Gibco | 15140-122 |
| Amphotericin B | Corning cellgro | 30-003-CF |
| Nonessential amino acids | Corning cellgro | 25-025-CI |
| Puromycin | Invitrogen | A11138-03 |
| BstZ171 | New England BioLabs Inc. | R3594 |
| NaeI | New England BioLabs Inc. | R0190L |
| HindIII | New England BioLabs Inc. | R0104L |
| AgeI | New England BioLabs Inc. | R0552L |
| SpeI | New England BioLabs Inc. | R0133L |
| NotI | New England BioLabs Inc. | R0189L |
| KpnI | New England BioLabs Inc. | R0142L |
| XmaI | New England BioLabs Inc. | R0180L |
| NdeI | New England BioLabs Inc. | R0111L |
| AccuPrime *Pfx* DNA Polymerase | Invitrogen | 12344024 |
| KOD Extreme Hot Start DNA Polymerase | EMD Millipore | 71975-3 |
| Lipofectamine 2000 | Invitrogen | 11668-019 |
| Ampicillin | Sigma | A9518-100G |
| Kanamycin | Sigma | K4378 |
| LB (Miller’s) Agar | Growcells | MBPE-3060 |
| LB (Miller’s) Broth | Growcells | MBPE-1050 |
| PBS (Phosphate buffered saline) | Corning cellgro | 21-040-CV |
| DPBS (Dulbecco’s phosphate buffered saline) | Corning cellgro | 21-030-CV |
| Tris Base | Fisher Scientific | BP152-5 |
| Sodium chloride | Fisher Scientific | S271-10 |
| Potassium chloride | Fisher Scientific | BP366-500 |
| Magnesium chloride | Fisher Scientific | M33-500 |
| Sodium deoxycholate | ICN Biomedical Inc. | 804312 |
| IGEPAL CA-630 | Sigma | I3021-100ML |
| Triton X-100 | Sigma | T-9284 |
| Tobacco etch virus protease | In house |  |
| Tris buffered saline (TBS; pH7.4) | Scy Tek | TBS500 |
| Amphipol 8-35 | Anatrace | A835 |
| Lauroylsarcosine | Sigma | L9150 |
| Bio-Beads SM-2 | Bio-Rad | 152-3920 |
| Phosphotungstic acid | Ted Pella | 19402 |
| EDTA | Sigma | E9884 |
| Sucrose | Sigma | S7903-1KG |
| L(+)-glutamic acid monosodium salt monohydrate | Sigma | G1626-100G |
| Paraformaldehyde (4%) in PBS | Boston Bioproducts | K06J101 |
| BD Cytofix/Cytoperm Plus | BD Biosciences | 555028 |
| Hoechst 33342 | ThermoFisher Scientific | H-3570 |
| Native PAGE Sample Buffer | Novex | BN20032 |
| Native PAGE running buffer 20X | Novex | BN2001 |
| Native PAGE 20X cathode buffer additive | Novex | BN2002 |
| Native PAGE 3-12% Bis Tris Gel | Novex | BN2011BX10 |
| Laemmli Sample Buffer 2X | Bio-Rad | 161-0737 |
| 2-mercaptoethanol | Sigma | M7522-100ML |
| Mini Protean TGX Gels 4-20% | Bio-Rad | 456-1094 |
| NativeMark Protein Std. | Invitrogen | 57030 |
| Novex Sharp Pre-Stained Protein Standards | Invitrogen | 57318 |
| Dimethyl pimelimidate dihydrochloride | Sigma | D8388 |
| Protein A Plus UltraLink Resin | Thermo Scientific | 53142 |
| Fluoromount-G | SouthernBiotech | 0100-01 |
| Boric acid | Sigma | B-0252 |
| Ethanolamine | Sigma | 398136-500ML |
| Ethane | Airgas | ET R80 |
| L-(+)-Arabinose | Sigma | A3256-100G |
| Agarose LE | AccuFlow | EK2808 |
| Membrane permeable coelenterazine-H | Nanolight Technology | 3012-10 |
| Fast Red TR Salt hemi (zinc chloride) | Sigma | 368881-25G |
| Naphthol AS-MX phosphate | Sigma | N4875-500MG |
| Alkaline phosphatase-conjugated Streptavidin | Jackson ImmunoResearch | 016-050-084 |
|  |  |  |
| **Experimental Models: Cell Lines** | | |
| MeWo | ATCC | HTB-65 |
| CHO DSP1 | [5] |  |
| Mel-DSP2 | [5] |  |
|  |  |  |
| **Oligonucleotides (All sequences are 5’ to 3’)** | | |
| **S/TEVV5** |  |  |
| gB-AgeI  CTTTTTTGCGTACCGGTACGTGC | [6] | Elim Bio |
| gB931  [PHOS]CACCCCCGTTACATTCTCGGTGCG | [6] | Elim Bio |
| gB-V5  [PHOS]GGTAAGCCTATCCCTAACCCTCTCCTCGGTCTCGATTCTACGTAAATAGCCAGGGGGTTT | [6] | Elim Bio |
| M13R  CACCCCCGTTACATTCTCGGTGCG | Invitrogen |  |
| gB-Cterm-S-tag  [PHOS]GCTGTCCATGTGCTGGCGTTCGAATTTAGCAGCAGCGGTTTCTTTCACCCCCGTTACATTCTCGG | [6] | Elim Bio |
| gB-link\_TEV\_link  [PHOS]*GGCGGCGGGGGCGGG*GAGAATCTTTATTTTCAGG*GCGGGGGCG*GGGGTAAGCCTATCCCTAACCC | [6] | Elim Bio |
| ∆S-tag-sense  [PHOS]GGCGGCGGGGGCGGGGAGATTC | [6] | Elim Bio |
| ∆S-tag-antisense [PHOS]CACCCCCGTTACATTCTCGGTG | [6] | Elim Bio |
| [31]F56625-56645  AGGTATAGGCAGTTCCCACGG | [7] | Elim Bio |
| [31]R59697-59717  TTTCATTGAGACTTGAAGCGC | [7] | Elim Bio |
|  |  |  |
| **gB KSQD 109/110/111/112** |  |  |
| pCAGGs-gB-NotI-sense  AAAGAATTCGCGGCCGCTGACCG | This paper | Elim Bio |
| gB-93k-sense  [PHOS]CAGGACGCCGAAACAAAACCCACGTTTTACG | This paper | Elim Bio |
| K109R-sense  [PHOS]CGGTCCCAGGACGCCGAAACAAAACC |  |  |
| Q111A-sense  [PHOS]GCGGACGCCGAAACAAAACCCACGTTTTACG | This paper | Elim Bio |
| K112A-sense  [PHOS]CAGGCTGCCGAAACAAAACCCACGTTTTACG | This paper | Elim Bio |
| Q111A-K112A sense  [PHOS]GCGGCTGCCGAAACAAAACCCACGTTTTACG | This paper | Elim Bio |
| pCAGGs-gB-KpnI-antisense  TCTCTGAAACGGGAATTGGTACC | This paper | Elim Bio |
| gB-93k-antisense  GGACTTGTGTATAGCTTCTCTGATTTCATCACC | This paper | Elim Bio |
| K109A-antisense  [PHOS]GGACGCGTGTATAGCTTCTCTGATTTCATCACC | This paper | Elim Bio |
| H108-antisense  [PHOS]GTGTATAGCTTCTCTGATTTCATCAC | This paper | Elim Bio |
| S110A-antisense  [PHOS]AGCCTTGTGTATAGCTTCTCTGATTTCATCACC | This paper | Elim Bio |
| K109A-S110A-antisense  [PHOS]AGCCGCGTGTATAGCTTCTCTGATTTCATCACC | This paper | Elim Bio |
|  | This paper | Elim Bio |
|  |  |  |
| **Recombinant DNA** | | |
|  |  |  |
| pCAGGs-VZVgB | [8] |  |
| pME18s | [8] |  |
| pME18s-gH[TL] | [8] |  |
| pME18s-gH[V5] | [4] |  |
| pCDNA3.1(+) | Invitrogen |  |
| pCDNA3.1-gL | [9] |  |
| pBud-gE/gI | [10] |  |
|  |  |  |
| pCAGGs-gB[K109A] | This paper |  |
| pCAGGs-gB[K109R] | This paper |  |
| pCAGGs-gB[S110A] | This paper |  |
| pCAGGs-gB[Q111A] | This paper |  |
| pCAGGs-gB[D112A] | This paper |  |
|  |  |  |
| pPOKA-TK-GFP gB-STEVV5 | This paper |  |
| pPOKA-TK-GFP gB-TEVV5 | [6] |  |
| pPOKA-TK-GFP gB-TEVV5 gB[K109A] | This paper |  |
| pPOKA-TK-GFP gB-TEVV5 gB[K109R] | This paper |  |
| pPOKA-TK-GFP gB-TEVV5 gB[S110A] | This paper |  |
| pPOKA-TK-GFP gB-TEVV5 gB[Q111A] | This paper |  |
| pPOKA-TK-GFP gB-TEVV5 gB[D112A] | This paper |  |
|  |  |  |
| **Software and Algorithms** | | |
| SerialEM | [11] | http://bio3d.colorado.edu/SerialEM/ |
| Relion v3.0 | [12, 13] | https://bitbucket.org/scheres/relion-3.0\_beta/src/master/ |
| ResMap v1.95 | [14] | https://sourceforge.net/projects/resmap-latest/ |
| UCSF Chimera v1.13.1 | [15] | http://www.cgl.ucsf.edu/chimera/ |
| ModelZ | [16] | https://cryoem.slac.stanford.edu/ncmi/resources/software/modelz |
| Phenix | [17] | https://www.phenix-online.org/ |
| WinCoot | [18] | http://bernhardcl.github.io/coot/ |
| RaptorX | [19] | http://raptorx.uchicago.edu/ |
| SWISS-MODEL | [20] | https://swissmodel.expasy.org/ |
| CHARMM-GUI | [21] | http://www.charmm-gui.org/ |
| Segger v1.9.5 | [22] | https://cryoem.slac.stanford.edu/ncmi/resources/software/segger |
| CellQuest Pro | BD |  |
| FlowJo | TreeStar |  |
| Prism 8 | GraphPad Software, Inc. |  |
| Staden | [23] | http://staden.sourceforge.net |
| GeneDoc v2.7 | Nicholas and Nicholas, 1997 | https://genedoc.software.informer.com/download/ |
| FiJi (ImageJ 1.52i) | NIH, USA | http://imagej.nih.gov/ij |
| Illustrator CS6 | Adobe |  |
| Photoshop CS6 | Adobe |  |
| AxioVision | Zeiss |  |
|  |  |  |
| **Other** | | |
| NativePAGE 2-12% Bis-Tris Gel | Invitrogen | BN2011BX10 |
| Mini-PROTEAN TGX Gels | Bio-Rad | 456-1094 |
| Superose-6 Increase 3.2x300mm | Sigma | GE29-0915-98 |
| Ultrathin carbon film on lacey carbon support 400M Cu | Ted Pella | 01824 |
| Quantifoil R 1.2/1.3 Au 300 mesh grids | Quantifoil |  |
| Tecnai F20 | FEI |  |
| Leica EM GP | Leica |  |
| Titan Krios | FEI |  |
| Pierce Fab Preparation Kit | Thermo Scientific | 44985 |
| Amicon Ultra-4 Centrifugal Filter Units 100kDa | Millipore | UFC810024 |
| Amicon Ultra-4 Centrifugal Filter Units 10kDa | Millipore | UFC801024 |
| QIAquick Gel Extraction Kit | Qiagen | 28706 |
| QIAquick Nucleotide Removal Kit | Qiagen | 28304 |
| QIAprep Spin Miniprep Kit | Qiagen | 27106 |
| QIAGEN Large-Construct Kit | Qiagen | 12462 |
| Immobilon-P | Merck Millipore Ltd. | IPVH00010 |
| Optical bottom 96-well black sided culture plates | Thermo Scientific | 165305 |
| FACSCalibur flow cytometer | Becton Dickenson |  |
| Synergy H1 Multi-mode Reader | Biotek |  |
| Nunclon Delta Surface 12-well plates | Thermo Scientific | 150628 |
| Cell Culture 6-well plates | Corning | 3506 |
| Microscope cover glass 18mm No. 1 | Fisher Scientific | 12-545-100 |
| Orbitrap Fusion mass Spectrometer | Thermo Scientific |  |
| Acquity M-Class liquid chromatograph | Waters Corporation |  |
| 1.8 micron C18 stationary phase beads | Dr. Maisch | http://www.dr-maisch.com |
|  |  |  |

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