

Supplementary Table 1

Oligonucleotides used in this study.

| Oligonucleotide | Sequence | Size | |
|-----------------|--|------|--------|
| | | WT | Mutant |
| 1062-1 | ATGAAAATGATGAGAAAAACATTGTTGGC | 457 | |
| 1062-2 | GCTAAAGTTACGTGCTGAAACGTTCTTGA TAATGTTCTGGGTTGTAGC | | |
| 1062-3 | GCTACAACCCAGAACATTATCAAGAACGT TTCAGCACGTAACCTTAGC | 447 | |
| 1062-4 | TTACAGGTCGACTAAAATTGTCTTAGTCG | | |
| 1062-5 | AAACTCGGACAACAGATCCG | 2757 | 904 |
| 1062-6 | ATCCTCATGATAGAGCCTGC | | |
| 2864-1 | ATGGCTCTTTTACATAAACCTTCATTGC | 341 | |
| 2864-2 | GTAGCCGTAGTTCTTGGTAATCATCGTCAC CATTGTGATTAGCAATC | | |
| 2864-3 | GATTGCTAATCACAATGGTGACGATGATT ACCAAGAACTACGGCTAC | 341 | |
| 2864-4 | TTACTTACGACGACGCCACATTGC | | |
| 2864-5 | TCGATGAACTTAGGTGAAACG | 2595 | 682 |
| 2864-6 | GTTTATTATGACTCGAAAAGCC | | |
| 576-1 | ATGAGCAAGGAAACATTTGATAGC | 500 | |
| 576-2 | CCAAATACGAAGATATCCCAATCTCGTAT GTTGGACCATTAGTGTG | | |
| 576-3 | CACACTAATGGTCCAACATACGAGATTGG GATATCTTCGTATTTGG | 465 | |
| 576-4 | TTAAACTGCGATTCACCGCC | | |
| 576-5 | TAAAGTCAGCCAACAGGAAGC | 2028 | 965 |
| 576-6 | GCTGATCTTAGCTAGATTTGC | | |
| 2984fd1 | ATGGAAAACCTCAAACATCTAC | | |
| 2984rev1 | TTAAAATGCTTCTTCGAGCG | | |
| 2985fd1 | GTGGACATCAATCTAGACATTC | | |
| 2985rev1 | AATAGCCATTGATTCAAAGGC | | |
| 2986fd1 | ATGAAAAAGTTAATCGCACTAGGC | | |
| 2986rev1 | TTAATCACGACGACCTATAAGC | | |
| 2987fd1 | ATGATTCGTCATATTCTACTG | | |
| 2987rev1 | TTACAAGGAGTAATCAAACAC | | |
| 2994fd1 | ATGGGCACTTGGTCGAAAG | | |
| 2994rev1 | TCAACTTAAATGGCTCTTTG | | |
| 2995fd1 | ATGAGTGAAAAAGTGAAAGTAGC | | |
| 2995rev1 | TTAAATGTCTAACGTCAGTTCTTG | | |
| 2996fd1 | ATGAATTACGATGAGTTTAACC | | |
| 2996rev1 | TTACGTGCGTGGTTCAGATAG | | |
| tas2984fd2 | ATCTTAGAAGCGGGTGCTGC | | |
| tas2984fd3 | CTCACATGGATTTTATTATCG | | |
| tas2984rev2 | CGCTTCTTGATAAGAACAGG | | |
| tas2995fd2 | ATCGAACTGCCAGTCATTCC | | |

Supplementary Table 2Proteomic analysis of 56 spots present in LGP32 and/or Δvsm ECP.

| Sample | Score | Hit/submitted | Intensity | ORF | Product | MW/pI |
|--------------|----------|---------------|-----------|---------------|---|---------|
| Δvsm | 4,24E+08 | 24/124 | 72% | VSA1062 | Metalloprotease | 101/4,6 |
| Δvsm | 1,88E+04 | 16/250 | 35% | VSA1096 | Conserved hypothetical protein | 40/5,9 |
| Δvsm | 1,58E+07 | 22/197 | 50% | VS1430 | ABC transporter | 36/5,4 |
| Δvsm | 5,25E+03 | 10/162 | 30% | VS2427 | Conserved hypothetical protein | 36/5,9 |
| Δvsm | 6,31E+13 | 39/130 | 76% | VS2864 | Conserved hypothetical protein | 94/4,6 |
| Δvsm | 4,51E+06 | 19/250 | 27% | VS2048 | Alanine dehydrogenase | 39/5,2 |
| LGP32 | 8,00E+06 | 16/246 | 44% | VS1267 | Metalloprotease | 66/5,5 |
| LGP32 | 1,19E+06 | 16/250 | 39% | VS1267 | Metalloprotease | 66/5,5 |
| LGP32 | 1,66E+07 | 16/100 | 56% | VS1267 | Metalloprotease | 66/5,5 |
| LGP32 | 9,21E+05 | 15/147 | 43% | VS1430 | ABC transporter | 36/5,4 |
| LGP32 | 1,54E+06 | 16/108 | 55% | VS1430 | ABC transporter | 36/5,4 |
| LGP32 | 2,49E+05 | 24/250 | 54% | VS1430 | ABC transporter | 36/5,4 |
| LGP32 | 1,73E+10 | 29/163 | 60% | VSA576 | Conserved hypothetical protein | 74/5,3 |
| Both | 2,52E+04 | 13/222 | 51% | VSA205 | ABC transporter: Substrate-binding protein precursor; phosphate uptake | 28/5,7 |
| Both | 5,93E+04 | 15/250 | 25% | VS1661 | Hypothetical protein | 58/5,3 |
| Both | 8,46E+07 | 28/250 | 45% | VSA576 | Conserved hypothetical protein | 74/5,3 |
| Both | 2,40E+06 | 18/89 | 67% | VSA310 | Outer membrane protein | 35/4,4 |
| Both | 5,64E+07 | 17/68 | 78% | VS1068 | hypothetical protein | 36/4,2 |
| Both | 6,28E+04 | 16/239 | 47% | VS1055 | Lysine-arginine- ornithine-binding periplasmic protein | 28/5,4 |

| | | | | | | |
|------|----------|--------|-----|---------|--|--------|
| | | | | | precursor | |
| Both | 4,67E+06 | 19/250 | 33% | VSA1211 | ABC-type sugar transport system, periplasmic component | 48/5,9 |
| Both | 5,25E+03 | 10/162 | 30% | VS2427 | Conserved hypothetical protein | 37/5,9 |
| Both | 1,34E+06 | 16/250 | 39% | VS9 | Putative amino-acid ABC transporter-binding protein path precursor | 27/5 |
| Both | 9,7E+04 | 12/170 | 45% | VSA395 | Outer membrane protein OmpA | 37/4,4 |
| Both | 1,47E+07 | 15/243 | 19% | VS861 | Long-chain fatty acid transport protein precursor | 45/4,5 |