Table S4. Detailed of the amino acid sequence of the *VP1* gene for the representative and prototype strains of each cluster in this study. Blue areas show conformational epitopes and green areas show Protruding 2 domain (aa279 to 406). The yellow boxes show positive selection sites.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 1 | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | | 18 | | 19 | | 20 | | 21 | | 22 | | 23 | | 24 | | 25 | | 26 | | 27 | | 28 | | 29 | | 30 | |
| AB039777(P7) | M | K | | M | | A | | S | | N | | D | | A | | A | | P | | S | | N | | D | | G | | A | | A | | N | | L | | V | | P | | E | | A | | N | | N | | E | | V | | M | | A | | L | | E | |
| LC122916(P7) | M | K | | M | | A | | S | | N | | D | | A | | A | | P | | S | | N | | D | | G | | A | | A | | N | | L | | V | | P | | E | | A | | N | | N | | E | | V | | M | | A | | L | | E | |
| MK956199(P7) | M | K | | M | | A | | S | | N | | D | | A | | A | | P | | S | | N | | D | | G | | A | | A | | N | | L | | V | | P | | E | | A | | N | | N | | E | | V | | M | | A | | L | | E | |
| MH791993(P7) | M | K | | M | | A | | S | | N | | D | | A | | A | | P | | S | | N | | D | | G | | A | | A | | N | | L | | V | | P | | E | | A | | T | | N | | E | | V | | M | | A | | L | | E | |
| JX989075(P6) | M | K | | M | | A | | S | | N | | D | | A | | A | | P | | S | | N | | D | | G | | A | | A | | N | | L | | V | | P | | E | | A | | N | | N | | E | | V | | M | | A | | L | | E | |
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|  | 31 | 32 | | 33 | | 34 | | 35 | | 36 | | 37 | | 38 | | 39 | | 40 | | 41 | | 42 | | 43 | | 44 | | 45 | | 46 | | 47 | | 48 | | 49 | | 50 | | 51 | | 52 | | 53 | | 54 | | 55 | | 56 | | 57 | | 58 | | 59 | | 60 | |
| AB039777(P7) | P | V | | V | | G | | A | | S | | I | | A | | A | | P | | V | | V | | G | | Q | | Q | | N | | I | | I | | D | | P | | W | | I | | R | | E | | N | | F | | V | | Q | | A | | P | |
| LC122916(P7) | P | V | | V | | G | | A | | S | | I | | A | | A | | P | | V | | V | | G | | Q | | Q | | N | | I | | I | | D | | P | | W | | I | | R | | E | | N | | F | | V | | Q | | A | | P | |
| MK956199(P7) | P | V | | V | | G | | A | | S | | I | | A | | A | | P | | V | | V | | G | | Q | | Q | | N | | I | | I | | D | | P | | W | | I | | R | | E | | N | | F | | V | | Q | | A | | P | |
| MH791993(P7) | P | V | | V | | G | | A | | S | | I | | A | | A | | P | | V | | V | | G | | Q | | Q | | N | | I | | I | | D | | P | | W | | I | | R | | E | | N | | F | | V | | Q | | A | | P | |
| JX989075(P6) | P | V | | V | | G | | A | | S | | I | | A | | A | | P | | V | | V | | G | | Q | | Q | | N | | I | | I | | D | | P | | W | | I | | R | | E | | N | | F | | V | | Q | | A | | P | |
|  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 61 | 62 | | 63 | | 64 | | 65 | | 66 | | 67 | | 68 | | 69 | | 70 | | 71 | | 72 | | 73 | | 74 | | 75 | | 76 | | 77 | | 78 | | 79 | | 80 | | 81 | | 82 | | 83 | | 84 | | 85 | | 86 | | 87 | | 88 | | 89 | | 90 | |
| AB039777(P7) | Q | G | | E | | F | | T | | V | | S | | P | | R | | N | | S | | P | | G | | E | | M | | L | | L | | N | | L | | E | | L | | G | | P | | E | | L | | N | | P | | Y | | L | | S | |
| LC122916(P7) | Q | G | | E | | F | | T | | V | | S | | P | | R | | N | | S | | P | | G | | E | | M | | L | | L | | N | | L | | E | | L | | G | | P | | E | | L | | N | | P | | Y | | L | | S | |
| MK956199(P7) | Q | G | | E | | F | | T | | V | | S | | P | | R | | N | | S | | P | | G | | E | | M | | L | | L | | N | | L | | E | | L | | G | | P | | E | | L | | N | | P | | Y | | L | | S | |
| MH791993(P7) | Q | G | | E | | F | | T | | V | | S | | P | | R | | N | | S | | P | | G | | E | | M | | L | | L | | N | | L | | E | | L | | G | | P | | E | | L | | N | | P | | Y | | L | | G | |
| JX989075(P6) | Q | G | | E | | F | | T | | V | | S | | P | | R | | N | | S | | P | | G | | E | | M | | L | | L | | N | | L | | E | | L | | G | | P | | E | | L | | N | | P | | Y | | L | | S | |
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|  | 91 | 92 | | 93 | | 94 | | 95 | | 96 | | 97 | | 98 | | 99 | | 100 | | 101 | | 102 | | 103 | | 104 | | 105 | | 106 | | 107 | | 108 | | 109 | | 110 | | 111 | | 112 | | 113 | | 114 | | 115 | | 116 | | 117 | | 118 | | 119 | | 120 | |
| AB039777(P7) | H | L | | S | | P | | M | | Y | | N | | G | | Y | | A | | G | | G | | M | | Q | | V | | Q | | V | | V | | L | | A | | G | | N | | A | | F | | T | | A | | G | | K | | I | | I | |
| LC122916(P7) | H | L | | S | | R | | M | | Y | | N | | G | | Y | | A | | G | | G | | M | | Q | | V | | Q | | V | | V | | L | | A | | G | | N | | A | | F | | T | | A | | G | | K | | I | | I | |
| MK956199(P7) | H | L | | S | | R | | M | | Y | | N | | G | | Y | | A | | G | | G | | M | | Q | | V | | Q | | V | | V | | L | | A | | G | | N | | A | | F | | T | | A | | G | | K | | I | | I | |
| MH791993(P7) | H | L | | S | | R | | M | | Y | | N | | G | | Y | | A | | G | | G | | M | | Q | | V | | Q | | V | | V | | L | | A | | G | | N | | A | | F | | T | | A | | G | | K | | I | | I | |
| JX989075(P6) | H | L | | S | | R | | M | | Y | | N | | G | | Y | | A | | G | | G | | M | | Q | | V | | Q | | V | | V | | L | | A | | G | | N | | A | | F | | T | | A | | G | | K | | I | | I | |
|  | 121 | | 122 | | 123 | | 124 | | 125 | | 126 | | 127 | | 128 | | 129 | | 130 | | 131 | | 132 | | 133 | | 134 | | 135 | | 136 | | 137 | | 138 | | 139 | | 140 | | 141 | | 142 | | 143 | | 144 | | 145 | | 146 | | 147 | | 148 | | 149 | | 150 | |
| AB039777(P7) | F | | A | | A | | V | | P | | P | | H | | F | | P | | V | | D | | N | | I | | S | | A | | A | | Q | | I | | T | | M | | C | | P | | H | | V | | I | | V | | D | | V | | R | | Q | |
| LC122916(P7) | F | | A | | A | | V | | P | | P | | H | | F | | P | | V | | D | | N | | I | | S | | A | | A | | Q | | I | | T | | M | | C | | P | | H | | V | | I | | V | | D | | V | | R | | Q | |
| MK956199(P7) | F | | A | | A | | V | | P | | P | | H | | F | | P | | V | | E | | N | | I | | S | | A | | A | | Q | | I | | T | | M | | C | | P | | H | | V | | I | | V | | D | | V | | R | | Q | |
| MH791993(P7) | F | | A | | A | | V | | P | | P | | H | | F | | P | | V | | E | | N | | I | | S | | A | | A | | Q | | I | | T | | M | | C | | P | | H | | V | | I | | V | | D | | V | | R | | Q | |
| JX989075(P6) | F | | A | | A | | V | | P | | P | | H | | F | | P | | V | | E | | N | | I | | S | | A | | A | | Q | | I | | T | | M | | C | | P | | H | | V | | I | | V | | D | | V | | R | | Q | |
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|  | 151 | | 152 | | 153 | | 154 | | 155 | | 156 | | 157 | | 158 | | 159 | | 160 | | 161 | | 162 | | 163 | | 164 | | 165 | | 166 | | 167 | | 168 | | 169 | | 170 | | 171 | | 172 | | 173 | | 174 | | 175 | | 176 | | 177 | | 178 | | 179 | | 180 | |
| AB039777(P7) | L | | E | | P | | V | | P | | L | | P | | L | | P | | D | | I | | R | | N | | R | | F | | F | | H | | Y | | N | | Q | | E | | N | | T | | P | | R | | M | | R | | L | | V | | A | |
| LC122916(P7) | L | | E | | P | | V | | L | | L | | P | | L | | P | | D | | I | | R | | N | | R | | F | | F | | H | | Y | | N | | Q | | E | | D | | T | | P | | R | | M | | R | | L | | V | | A | |
| MK956199(P7) | L | | E | | P | | V | | L | | L | | P | | L | | P | | D | | I | | R | | N | | R | | F | | F | | H | | Y | | N | | Q | | E | | N | | T | | P | | R | | M | | R | | L | | V | | A | |
| MH791993(P7) | L | | E | | P | | V | | L | | L | | P | | L | | P | | D | | I | | R | | N | | R | | F | | F | | H | | Y | | N | | Q | | E | | N | | T | | P | | R | | M | | R | | L | | V | | A | |
| JX989075(P6) | L | | E | | P | | V | | L | | L | | P | | L | | P | | D | | I | | R | | N | | R | | F | | F | | H | | Y | | N | | Q | | E | | D | | T | | P | | R | | M | | R | | L | | V | | A | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 181 | | 182 | | 183 | | 184 | | 185 | | 186 | | 187 | | 188 | | 189 | | 190 | | 191 | | 192 | | 193 | | 194 | | 195 | | 196 | | 197 | | 198 | | 199 | | 200 | | 201 | | 202 | | 203 | | 204 | | 205 | | 206 | | 207 | | 208 | | 209 | | 210 | |
| AB039777(P7) | M | | L | | Y | | T | | P | | L | | R | | A | | N | | S | | G | | E | | D | | V | | F | | T | | V | | S | | C | | R | | V | | L | | T | | R | | P | | A | | P | | D | | F | | E | |
| LC122916(P7) | M | | L | | Y | | T | | P | | L | | R | | A | | N | | S | | G | | E | | D | | V | | F | | T | | V | | S | | C | | R | | V | | L | | T | | R | | P | | A | | P | | D | | F | | E | |
| MK956199(P7) | M | | L | | Y | | T | | P | | L | | R | | A | | N | | S | | G | | E | | D | | V | | F | | T | | V | | S | | C | | R | | V | | L | | T | | R | | P | | A | | P | | D | | F | | E | |
| MH791993(P7) | M | | L | | Y | | T | | P | | L | | R | | A | | N | | S | | G | | E | | D | | V | | F | | T | | V | | S | | C | | R | | V | | L | | T | | R | | P | | A | | P | | D | | F | | E | |
| JX989075(P6) | M | | L | | Y | | T | | P | | L | | R | | A | | N | | S | | G | | E | | D | | V | | F | | T | | V | | S | | C | | R | | V | | L | | T | | R | | P | | A | | P | | D | | F | | E | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 211 | | 212 | | 213 | | 214 | | 215 | | 216 | | 217 | | 218 | | 219 | | 220 | | 221 | | 222 | | 223 | | 224 | | 225 | | 226 | | 227 | | 228 | | 229 | | 230 | | 231 | | 232 | | 233 | | 234 | | 235 | | 236 | | 237 | | 238 | | 239 | | 240 | |
| AB039777(P7) | F | | T | | F | | L | | V | | P | | P | | T | | V | | E | | S | | K | | T | | K | | P | | F | | T | | L | | P | | I | | L | | T | | L | | G | | E | | L | | S | | N | | S | | R | |
| LC122916(P7) | F | | T | | F | | L | | V | | P | | P | | T | | V | | E | | S | | K | | T | | K | | P | | F | | T | | L | | P | | I | | L | | T | | L | | G | | E | | L | | S | | N | | S | | R | |
| MK956199(P7) | F | | T | | F | | L | | V | | P | | P | | T | | V | | E | | S | | K | | T | | K | | P | | F | | T | | L | | P | | I | | L | | T | | L | | G | | E | | L | | S | | N | | S | | R | |
| MH791993(P7) | F | | T | | F | | L | | V | | P | | P | | T | | V | | E | | S | | K | | T | | K | | P | | F | | T | | L | | P | | I | | L | | T | | L | | G | | E | | L | | S | | N | | S | | R | |
| JX989075(P6) | F | | T | | F | | L | | V | | P | | P | | T | | V | | E | | S | | K | | T | | K | | P | | F | | T | | L | | P | | I | | L | | T | | L | | G | | E | | L | | S | | N | | S | | R | |
|  | 241 | | 242 | | 243 | | 244 | | 245 | | 246 | | 247 | | 248 | | 249 | | 250 | | 251 | | 252 | | 253 | | 254 | | 255 | | 256 | | 257 | | 258 | | 259 | | 260 | | 261 | | 262 | | 263 | | 264 | | 265 | | 266 | | 267 | | 268 | | 269 | | 270 | |
| AB039777(P7) | F | | P | | A | | A | | I | | D | | M | | L | | Y | | T | | D | | P | | N | | E | | S | | I | | V | | V | | Q | | P | | Q | | N | | G | | R | | C | | T | | L | | D | | G | | T | |
| LC122916(P7) | F | | P | | A | | A | | I | | D | | M | | L | | Y | | T | | D | | P | | N | | E | | S | | I | | V | | V | | Q | | P | | Q | | N | | G | | R | | C | | T | | L | | D | | G | | T | |
| MK956199(P7) | F | | P | | A | | P | | I | | D | | M | | L | | Y | | T | | D | | P | | N | | E | | G | | I | | V | | V | | Q | | P | | Q | | N | | G | | R | | C | | T | | L | | D | | G | | T | |
| MH791993(P7) | F | | P | | A | | P | | I | | D | | M | | L | | Y | | T | | D | | P | | N | | E | | A | | I | | V | | V | | Q | | P | | Q | | N | | G | | R | | C | | T | | L | | D | | G | | T | |
| JX989075(P6) | F | | P | | A | | P | | I | | D | | M | | L | | Y | | T | | D | | P | | N | | E | | T | | I | | V | | V | | Q | | P | | Q | | N | | G | | R | | C | | T | | L | | D | | G | | T | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 271 | | 272 | | 273 | | 274 | | 275 | | 276 | | 277 | | 278 | | 279 | | 280 | | 281 | | 282 | | 283 | | 284 | | 285 | | 286 | | 287 | | 288 | | 289 | | 290 | | 291 | | 292 | | 293 | | 294 | | 295 | | 296 | | 297 | | 298 | | 299 | | 300 | |
| AB039777(P7) | L | | Q | | G | | T | | T | | Q | | L | | V | | P | | T | | Q | | I | | C | | A | | F | | R | | G | | T | | L | | I | | S | | Q | | T | | A | | R | | A | | A | | D | | S | | T | |
| LC122916(P7) | L | | Q | | G | | T | | T | | Q | | L | | V | | P | | T | | Q | | I | | C | | A | | F | | R | | G | | T | | L | | I | | S | | Q | | N | | A | | R | | A | | A | | D | | L | | T | |
| MK956199(P7) | L | | Q | | G | | T | | T | | Q | | L | | V | | P | | T | | Q | | I | | C | | A | | F | | R | | G | | T | | L | | I | | G | | Q | | T | | S | | R | | S | | S | | D | | S | | T | |
| MH791993(P7) | L | | Q | | G | | T | | T | | Q | | L | | V | | P | | T | | Q | | I | | C | | S | | F | | R | | G | | T | | L | | I | | S | | Q | | T | | S | | R | | S | | A | | D | | S | | T | |
| JX989075(P6) | L | | Q | | G | | T | | T | | Q | | L | | V | | P | | T | | Q | | I | | C | | S | | F | | R | | G | | T | | L | | I | | S | | Q | | T | | S | | R | | S | | A | | D | | S | | T | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 301 | | 302 | | 303 | | 304 | | 305 | | 306 | | 307 | | 308 | | 309 | | 310 | | 311 | | 312 | | 313 | | 314 | | 315 | | 316 | | 317 | | 318 | | 319 | | 320 | | 321 | | 322 | | 323 | | 324 | | 325 | | 326 | | 327 | | 328 | | 329 | | 330 | |
| AB039777(P7) | D | | S | | P | | Q | | R | | A | | R | | D | | H | | P | | L | | H | | V | | Q | | V | | K | | N | | L | | G | | G | | T | | Q | | Y | | D | | P | | T | | D | | D | | I | | P | |
| LC122916(P7) | D | | S | | P | | Q | | R | | A | | R | | N | | H | | P | | L | | H | | V | | Q | | V | | K | | N | | L | | D | | G | | T | | Q | | Y | | D | | P | | T | | D | | D | | I | | P | |
| MK956199(P7) | D | | S | | A | | P | | R | | R | | R | | D | | H | | P | | L | | H | | V | | Q | | L | | K | | N | | L | | D | | G | | T | | Q | | Y | | D | | P | | T | | D | | E | | V | | P | |
| MH791993(P7) | D | | S | | A | | P | | R | | V | | R | | N | | H | | P | | L | | H | | V | | Q | | L | | K | | N | | L | | D | | G | | T | | P | | Y | | D | | P | | T | | D | | E | | V | | P | |
| JX989075(P6) | D | | S | | A | | P | | R | | V | | R | | N | | H | | P | | L | | H | | V | | Q | | L | | K | | N | | L | | D | | G | | T | | P | | Y | | D | | P | | T | | D | | E | | V | | P | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 331 | | 332 | | 333 | | 334 | | 335 | | 336 | | 337 | | 338 | | 339 | | 340 | | 341 | | 342 | | 343 | | 344 | | 345 | | 346 | | 347 | | 348 | | 349 | | 350 | | 351 | | 352 | | 353 | | 354 | | 355 | | 356 | | 357 | | 358 | | 359 | | 360 | |
| AB039777(P7) | A | | V | | L | | G | | A | | I | | D | | F | | K | | G | | T | | V | | F | | G | | V | | A | | S | | Q | | R | | D | | V | | S | | G | | P | | Q | | E | | Q | | G | | H | | Y | |
| LC122916(P7) | A | | V | | L | | G | | A | | I | | D | | F | | K | | G | | T | | V | | F | | G | | V | | A | | S | | Q | | R | | D | | V | | S | | G | | T | | Q | | E | | Q | | G | | H | | Y | |
| MK956199(P7) | A | | V | | L | | G | | A | | I | | D | | F | | K | | G | | T | | V | | F | | G | | V | | A | | S | | Q | | R | | D | | V | | S | | G | | Q | | Q | | V | | G | | - | | - | | - | |
| MH791993(P7) | A | | V | | L | | G | | A | | I | | D | | F | | K | | G | | T | | V | | F | | G | | I | | A | | S | | Q | | R | | N | | T | | T | | G | | S | | S | | I | | G | | - | | - | | - | |
| JX989075(P6) | A | | V | | L | | G | | A | | I | | D | | F | | K | | G | | T | | V | | F | | G | | V | | A | | S | | Q | | R | | N | | T | | T | | G | | S | | S | | V | | G | | - | | - | | - | |
|  | 361 | | 362 | | 363 | | 364 | | 365 | | 366 | | 367 | | 368 | | 369 | | 370 | | 371 | | 372 | | 373 | | 374 | | 375 | | 376 | | 377 | | 378 | | 379 | | 380 | | 381 | | 382 | | 383 | | 384 | | 385 | | 386 | | 387 | | 388 | | 389 | | 390 | |
| AB039777(P7) | A | | T | | R | | A | | H | | E | | A | | H | | I | | D | | T | | T | | D | | P | | K | | Y | | A | | P | | K | | L | | G | | T | | I | | L | | I | | K | | S | | E | | S | | N | |
| LC122916(P7) | A | | T | | R | | A | | H | | E | | A | | H | | I | | D | | T | | T | | D | | P | | K | | Y | | A | | P | | K | | L | | G | | T | | I | | L | | I | | K | | S | | E | | S | | T | |
| MK956199(P7) | A | | T | | R | | A | | H | | E | | V | | H | | I | | N | | T | | T | | D | | P | | R | | Y | | T | | P | | K | | L | | G | | S | | I | | L | | M | | H | | S | | E | | S | | D | |
| MH791993(P7) | A | | T | | R | | A | | H | | E | | V | | H | | I | | D | | T | | T | | N | | P | | R | | Y | | T | | P | | K | | L | | G | | S | | V | | L | | M | | Y | | S | | E | | S | | N | |
| JX989075(P6) | A | | T | | R | | A | | H | | E | | V | | H | | I | | D | | T | | T | | N | | P | | R | | Y | | T | | P | | K | | L | | G | | S | | V | | L | | M | | H | | S | | E | | S | | S | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 391 | | 392 | | 393 | | 394 | | 395 | | 396 | | 397 | | 398 | | 399 | | 400 | | 401 | | 402 | | 403 | | 404 | | 405 | | 406 | | 407 | | 408 | | 409 | | 410 | | 411 | | 412 | | 413 | | 414 | | 415 | | 416 | | 417 | | 418 | | 419 | | 420 | |
| AB039777(P7) | D | | F | | T | | T | | N | | Q | | P | | I | | R | | F | | T | | P | | V | | G | | M | | G | | D | | N | | N | | W | | R | | Q | | W | | E | | L | | P | | D | | Y | | S | | G | |
| LC122916(P7) | D | | F | | T | | T | | N | | Q | | P | | I | | R | | F | | T | | P | | V | | G | | M | | G | | D | | N | | N | | W | | R | | Q | | W | | E | | L | | P | | D | | Y | | S | | G | |
| MK956199(P7) | D | | F | | V | | T | | G | | Q | | P | | V | | R | | F | | T | | P | | I | | G | | M | | G | | D | | N | | D | | W | | H | | Q | | W | | E | | L | | P | | D | | Y | | S | | G | |
| MH791993(P7) | D | | F | | D | | D | | G | | Q | | P | | T | | R | | F | | T | | P | | I | | G | | M | | G | | A | | D | | D | | W | | R | | Q | | W | | E | | L | | P | | E | | Y | | S | | G | |
| JX989075(P6) | D | | F | | D | | D | | G | | Q | | P | | T | | R | | F | | T | | P | | I | | G | | M | | G | | A | | D | | D | | W | | H | | Q | | W | | E | | L | | P | | E | | Y | | S | | G | |
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|  | 421 | | 422 | | 423 | | 424 | | 425 | | 426 | | 427 | | 428 | | 429 | | 430 | | 431 | | 432 | | 433 | | 434 | | 435 | | 436 | | 437 | | 438 | | 439 | | 440 | | 441 | | 442 | | 443 | | 444 | | 445 | | 446 | | 447 | | 448 | | 449 | | 450 | |
| AB039777(P7) | R | | L | | T | | L | | N | | M | | N | | L | | A | | P | | A | | V | | S | | P | | S | | F | | P | | G | | E | | R | | I | | L | | F | | F | | R | | S | | I | | V | | P | | S | |
| LC122916(P7) | S | | L | | T | | L | | N | | M | | N | | L | | A | | P | | A | | V | | S | | P | | S | | F | | P | | G | | E | | R | | I | | L | | F | | F | | R | | S | | I | | V | | P | | S | |
| MK956199(P7) | R | | L | | T | | L | | N | | M | | N | | L | | A | | P | | A | | V | | A | | P | | A | | F | | P | | G | | E | | R | | I | | L | | F | | F | | R | | S | | I | | V | | P | | S | |
| MH791993(P7) | H | | L | | T | | L | | N | | M | | N | | L | | A | | P | | A | | V | | A | | P | | A | | F | | P | | G | | E | | R | | I | | L | | F | | F | | R | | S | | V | | V | | P | | S | |
| JX989075(P6) | H | | L | | T | | L | | N | | M | | N | | L | | A | | P | | A | | V | | A | | P | | A | | F | | P | | G | | E | | R | | I | | L | | F | | F | | R | | S | | V | | V | | P | | S | |
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|  | 451 | | 452 | | 453 | | 454 | | 455 | | 456 | | 457 | | 458 | | 459 | | 460 | | 461 | | 462 | | 463 | | 464 | | 465 | | 466 | | 467 | | 468 | | 469 | | 470 | | 471 | | 472 | | 473 | | 474 | | 475 | | 476 | | 477 | | 478 | | 479 | | 480 | |
| AB039777(P7) | A | | G | | G | | Y | | G | | S | | G | | Y | | I | | D | | C | | L | | I | | P | | Q | | E | | W | | V | | Q | | H | | F | | Y | | Q | | E | | A | | A | | P | | S | | Q | | S | |
| LC122916(P7) | A | | G | | G | | Y | | G | | S | | G | | Y | | I | | D | | C | | L | | I | | P | | Q | | E | | W | | V | | Q | | H | | F | | Y | | Q | | E | | A | | A | | P | | S | | Q | | S | |
| MK956199(P7) | A | | G | | G | | Y | | G | | S | | G | | Q | | I | | D | | C | | L | | I | | P | | Q | | E | | W | | V | | Q | | H | | F | | Y | | Q | | E | | A | | A | | P | | S | | Q | | S | |
| MH791993(P7) | A | | G | | G | | Y | | G | | S | | G | | H | | I | | D | | C | | L | | I | | P | | Q | | E | | W | | V | | Q | | H | | F | | Y | | Q | | E | | A | | A | | P | | S | | Q | | S | |
| JX989075(P6) | A | | G | | G | | Y | | G | | S | | G | | Q | | I | | D | | C | | L | | I | | P | | Q | | E | | W | | V | | Q | | H | | F | | Y | | Q | | E | | A | | A | | P | | S | | Q | | S | |
|  | 481 | | 482 | | 483 | | 484 | | 485 | | 486 | | 487 | | 488 | | 489 | | 490 | | 491 | | 492 | | 493 | | 494 | | 495 | | 496 | | 497 | | 498 | | 499 | | 500 | | 501 | | 502 | | 503 | | 504 | | 505 | | 506 | | 507 | | 508 | | 509 | | 510 | |
| AB039777(P7) | A | | V | | A | | L | | V | | R | | Y | | V | | N | | P | | D | | T | | G | | R | | N | | I | | F | | E | | A | | K | | L | | H | | R | | E | | G | | F | | L | | T | | V | | A | |
| LC122916(P7) | A | | V | | A | | L | | V | | R | | Y | | V | | N | | P | | D | | T | | G | | R | | N | | I | | F | | E | | A | | K | | L | | H | | R | | E | | G | | F | | L | | T | | V | | A | |
| MK956199(P7) | A | | V | | A | | L | | I | | R | | Y | | V | | N | | P | | D | | T | | G | | R | | N | | I | | F | | E | | A | | K | | L | | H | | R | | E | | G | | F | | I | | T | | V | | A | |
| MH791993(P7) | A | | V | | A | | L | | I | | R | | Y | | V | | N | | P | | D | | T | | G | | R | | N | | I | | F | | E | | A | | K | | L | | H | | R | | E | | G | | F | | I | | T | | V | | A | |
| JX989075(P6) | A | | V | | A | | L | | I | | R | | Y | | V | | N | | P | | D | | T | | G | | R | | N | | I | | F | | E | | A | | K | | L | | H | | R | | E | | G | | F | | I | | T | | V | | A | |
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|  | 511 | | 512 | | 513 | | 514 | | 515 | | 516 | | 517 | | 518 | | 519 | | 520 | | 521 | | 522 | | 523 | | 524 | | 525 | | 526 | | 527 | | 528 | | 529 | | 530 | | 531 | | 532 | | 533 | | 534 | | 535 | | 536 | | 537 | | 538 | | 539 | | 540 | |
| AB039777(P7) | N | | S | | G | | N | | N | | P | | I | | V | | V | | P | | P | | N | | G | | Y | | F | | R | | F | | E | | A | | W | | V | | N | | Q | | F | | Y | | T | | L | | A | | P | | M | |
| LC122916(P7) | N | | S | | G | | N | | N | | P | | I | | V | | V | | P | | P | | N | | G | | Y | | F | | R | | F | | E | | A | | W | | V | | N | | Q | | F | | Y | | T | | L | | A | | P | | M | |
| MK956199(P7) | N | | S | | G | | N | | N | | P | | I | | V | | V | | P | | P | | N | | G | | Y | | F | | R | | F | | E | | A | | W | | V | | N | | Q | | F | | Y | | T | | L | | T | | P | | M | |
| MH791993(P7) | N | | S | | G | | N | | N | | P | | I | | V | | V | | P | | P | | N | | G | | Y | | F | | R | | F | | E | | A | | W | | V | | N | | Q | | F | | Y | | T | | L | | T | | P | | M | |
| JX989075(P6) | N | | S | | G | | N | | N | | P | | I | | V | | V | | P | | P | | N | | G | | Y | | F | | R | | F | | E | | A | | W | | V | | N | | Q | | F | | Y | | T | | L | | T | | P | | M | |
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|  | 541 | | 542 | | 543 | | 544 | | 545 | | 546 | | 547 | | 548 | | 549 | | 550 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| AB039777(P7) | G | | S | | G | | Q | | G | | R | | R | | R | | A | | Q | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
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