**Table S4. Priority rank of cellular proteins based on the merged EBV (23) and MHV-68 PPI hit list**

| GeneID | Name | score(merged) | p-val(merged) | Score | p-val | Virus |
|---|---|---|---|---|---|---|
| 7531 | YWHAE | 120 | 1.02E-04 | 81 | 2.19E-05 | MHV-68 |
| 7329 | UBE2I | 115 | 2.94E-04 | 75 | 1.87E-04 | MHV-68 |
| 1387 | CREBBP | 115 | 2.94E-04 | 72 | 4.84E-04 | MHV-68 |
| 7329 | UBE2I | 115 | 2.94E-04 | 41 | 4.11E-03 | EBV |
| 1499 | CTNNB1 | 112 | 5.19E-04 | 70 | 8.55E-04 | MHV-68 |
| 8554 | PIAS1 | 103 | 2.40E-03 | 65 | 2.88E-03 | MHV-68 |
| 3309 | HSPA5 | 102 | 2.78E-03 | 59 | 8.40E-03 | MHV-68 |
| 5499 | PPP1CA | 97 | 5.24E-03 | 30 | 3.64E-02 | EBV |
| 2316 | FLNA | 93 | 8.18E-03 | 52 | 2.05E-02 | MHV-68 |
| 7251 | TSG101 | 90 | 1.09E-02 | 24 | 8.08E-02 | EBV |
| 4790 | NFKB1 | 89 | 1.20E-02 | 29 | 4.19E-02 | EBV |
| 10527 | IPO7 | 84 | 1.79E-02 | 54 | 1.62E-02 | MHV-68 |
| 8936 | WASF1 | 76 | 3.09E-02 | 50 | 2.55E-02 | MHV-68 |
| 80342 | TRAF3IP3 | 74 | 3.49E-02 | 27 | 5.55E-02 | EBV |
| 8723 | SNX4 | 73 | 3.70E-02 | 26 | 6.31E-02 | EBV |
| 163 | AP2B1 | 72 | 3.93E-02 | 24 | 8.08E-02 | EBV |
| 81 | ACTN4 | 70 | 4.42E-02 | 32 | 1.19E-01 | MHV-68 |
| 81 | ACTN4 | 70 | 4.42E-02 | 18 | 1.56E-01 | EBV |
| 51517 | NCKIPSD | 70 | 4.42E-02 | 27 | 5.55E-02 | EBV |
| 3838 | KPNA2 | 66 | 5.54E-02 | 18 | 1.56E-01 | EBV |
| 8678 | BECN1 | 64 | 6.18E-02 | 41 | 5.90E-02 | MHV-68 |
| 26512 | INTS6 | 63 | 6.52E-02 | 40 | 6.41E-02 | MHV-68 |
| 54764 | ZRANB1 | 63 | 6.52E-02 | 19 | 2.72E-01 | MHV-68 |
| 3276 | HRMT1L2 | 63 | 6.52E-02 | 13 | 2.53E-01 | EBV |
| 5684 | PSMA3 | 58 | 8.41E-02 | 18 | 1.56E-01 | EBV |
| 6125 | RPL5 | 57 | 8.83E-02 | 21 | 2.41E-01 | MHV-68 |
| 5315 | PKM2 | 56 | 9.27E-02 | 4 | 5.68E-01 | EBV |
| 2335 | FN1 | 55 | 9.73E-02 | 24 | 2.01E-01 | MHV-68 |
| 2335 | FN1 | 55 | 9.73E-02 | 15 | 2.10E-01 | EBV |
| 6720 | SREBF1 | 54 | 1.02E-01 | 19 | 2.72E-01 | MHV-68 |
| 4000 | LMNA | 53 | 1.07E-01 | 17 | 3.05E-01 | MHV-68 |
| 142 | PARP1 | 52 | 1.12E-01 | 60 | 7.17E-03 | MHV-68 |
| 2202 | EFEMP1 | 51 | 1.17E-01 | 6 | 4.72E-01 | EBV |
| 29760 | BLNK | 51 | 1.17E-01 | 5 | 5.17E-01 | EBV |
| 8470 | SORBS2 | 50 | 1.22E-01 | 11 | 4.31E-01 | MHV-68 |
| 6386 | SDCBP | 48 | 1.34E-01 | 15 | 3.42E-01 | MHV-68 |
| 8661 | EIF3A | 45 | 1.52E-01 | 24 | 2.01E-01 | MHV-68 |
| 9276 | COPB2 | 45 | 1.52E-01 | 16 | 3.23E-01 | MHV-68 |
| 708 | C1QBP | 45 | 1.52E-01 | 5 | 5.17E-01 | EBV |
| 4926 | NUMA1 | 43 | 1.66E-01 | 25 | 1.89E-01 | MHV-68 |
| 6717 | SRI | 43 | 1.66E-01 | 14 | 2.30E-01 | EBV |
| 3690 | ITGB3 | 42 | 1.72E-01 | 26 | 1.77E-01 | MHV-68 |
| 335 | APOA1 | 41 | 1.80E-01 | 0 | 1.00E+00 | MHV-68 |
| 22919 | MAPRE1 | 41 | 1.80E-01 | 7 | 4.32E-01 | EBV |
| 5525 | PPP2R5A | 40 | 1.87E-01 | 44 | 4.53E-02 | MHV-68 |
| 2597 | GAPDH | 39 | 1.94E-01 | 25 | 7.16E-02 | EBV |
| 7846 | TUBA3 | 39 | 1.94E-01 | 24 | 8.08E-02 | EBV |
| 10987 | COPS5 | 37 | 2.11E-01 | 43 | 4.95E-02 | MHV-68 |
| 5094 | PCBP2 | 37 | 2.11E-01 | 22 | 2.28E-01 | MHV-68 |
| 10919 | EHMT2 | 37 | 2.11E-01 | 2 | 8.01E-01 | MHV-68 |
| 2801 | GOLGA2 | 34 | 2.36E-01 | 4 | 6.66E-01 | MHV-68 |
| 6672 | SP100 | 34 | 2.36E-01 | 25 | 7.16E-02 | EBV |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1639 | DCTN1 | 33 | 2.45E-01 | 41 | 5.90E-02 | MHV-68 |
| 10318 | TNIP1 | 33 | 2.45E-01 | 25 | 1.89E-01 | MHV-68 |
| 3308 | HSPA4 | 32 | 2.55E-01 | 36 | 8.83E-02 | MHV-68 |
| 9231 | DLG5 | 32 | 2.55E-01 | 18 | 2.88E-01 | MHV-68 |
| 5713 | PSMD7 | 32 | 2.55E-01 | 15 | 3.42E-01 | MHV-68 |
| 79027 | ZNF655 | 32 | 2.55E-01 | 4 | 6.66E-01 | MHV-68 |
| 87 | ACTN1 | 31 | 2.65E-01 | 39 | 6.95E-02 | MHV-68 |
| 6711 | SPTBN1 | 31 | 2.65E-01 | 36 | 8.83E-02 | MHV-68 |
| 51720 | RAP80 | 31 | 2.65E-01 | 34 | 1.03E-01 | MHV-68 |
| 57530 | CGN | 31 | 2.65E-01 | 20 | 2.56E-01 | MHV-68 |
| 2243 | FGA | 31 | 2.65E-01 | 1 | 8.53E-01 | MHV-68 |
| 87 | ACTN1 | 31 | 2.65E-01 | 22 | 1.02E-01 | EBV |
| 1195 | CLK1 | 31 | 2.65E-01 | 7 | 4.32E-01 | EBV |
| 5978 | REST | 30 | 2.75E-01 | 31 | 1.27E-01 | MHV-68 |
| 8976 | WASL | 29 | 2.86E-01 | 34 | 1.03E-01 | MHV-68 |
| 9994 | CASP8AP2 | 29 | 2.86E-01 | 33 | 1.10E-01 | MHV-68 |
| 7431 | VIM | 29 | 2.86E-01 | 19 | 1.41E-01 | EBV |
| 22827 | PUF60 | 28 | 2.96E-01 | 0 | 1.00E+00 | MHV-68 |
| 3856 | KRT8 | 26 | 3.19E-01 | 33 | 1.10E-01 | MHV-68 |
| 5093 | PCBP1 | 26 | 3.19E-01 | 30 | 1.36E-01 | MHV-68 |
| 6383 | SDC2 | 26 | 3.19E-01 | 14 | 3.63E-01 | MHV-68 |
| 3320 | HSP90AA1 | 25 | 3.31E-01 | 25 | 1.89E-01 | MHV-68 |
| 23471 | TRAM1 | 25 | 3.31E-01 | 12 | 4.07E-01 | MHV-68 |
| 7186 | TRAF2 | 25 | 3.31E-01 | 13 | 2.53E-01 | EBV |
| 3183 | HNRNPC | 24 | 3.44E-01 | 28 | 1.55E-01 | MHV-68 |
| 10142 | AKAP9 | 23 | 3.57E-01 | 37 | 8.16E-02 | MHV-68 |
| 23384 | KIAA0376 | 23 | 3.57E-01 | 14 | 3.63E-01 | MHV-68 |
| 3172 | HNF4A | 22 | 3.70E-01 | 12 | 4.07E-01 | MHV-68 |
| 7185 | TRAF1 | 22 | 3.70E-01 | 16 | 1.90E-01 | EBV |
| 2065 | ERBB3 | 20 | 3.98E-01 | 22 | 2.28E-01 | MHV-68 |
| 84433 | CARD11 | 19 | 4.13E-01 | 25 | 1.89E-01 | MHV-68 |
| 7184 | HSP90B1 | 19 | 4.13E-01 | 17 | 3.05E-01 | MHV-68 |
| 4055 | LTBR | 19 | 4.13E-01 | 3 | 7.15E-01 | MHV-68 |
| 9541 | CIR | 18 | 4.28E-01 | 6 | 4.72E-01 | EBV |
| 6122 | RPL3 | 17 | 4.44E-01 | 12 | 2.77E-01 | EBV |
| 10771 | ZMYND11 | 17 | 4.44E-01 | 1 | 7.91E-01 | EBV |
| 23126 | POGZ | 16 | 4.61E-01 | 18 | 2.88E-01 | MHV-68 |
| 4001 | LMNB1 | 16 | 4.61E-01 | 13 | 2.53E-01 | EBV |
| 6709 | SPTAN1 | 14 | 4.96E-01 | 15 | 3.42E-01 | MHV-68 |
| 667 | DST | 14 | 4.96E-01 | 9 | 4.84E-01 | MHV-68 |
| 6830 | SUPT6H | 13 | 5.15E-01 | 14 | 3.63E-01 | MHV-68 |
| 8655 | DNCL1 | 13 | 5.15E-01 | 12 | 2.77E-01 | EBV |
| 10989 | IMMT | 13 | 5.15E-01 | 8 | 3.96E-01 | EBV |
| 11117 | EMILIN1 | 12 | 5.35E-01 | 19 | 2.72E-01 | MHV-68 |
| 10605 | PAIP1 | 11 | 5.55E-01 | 17 | 3.05E-01 | MHV-68 |
| 8887 | TAX1BP1 | 11 | 5.55E-01 | 17 | 3.05E-01 | MHV-68 |
| 7917 | BAT3 | 11 | 5.55E-01 | 9 | 4.84E-01 | MHV-68 |
| 7917 | BAT3 | 11 | 5.55E-01 | 6 | 4.72E-01 | EBV |
| 7791 | ZYX | 11 | 5.55E-01 | 2 | 7.12E-01 | EBV |
| 4678 | NASP | 10 | 5.78E-01 | 12 | 4.07E-01 | MHV-68 |
| 6117 | RPA1 | 10 | 5.78E-01 | 10 | 4.57E-01 | MHV-68 |
| 65125 | WNK1 | 10 | 5.78E-01 | 2 | 8.01E-01 | MHV-68 |
| 4925 | NUCB2 | 10 | 5.78E-01 | 7 | 4.32E-01 | EBV |
| 3912 | LAMB1 | 10 | 5.78E-01 | 6 | 4.72E-01 | EBV |
| 9971 | NR1H4 | 9 | 6.01E-01 | 7 | 5.45E-01 | MHV-68 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4628 | MYH10 | 8 | 6.28E-01 | 6 | 5.80E-01 | MHV-68 |
| 1998 | ELF2 | 8 | 6.28E-01 | 4 | 5.68E-01 | EBV |
| 7073 | TIAL1 | 7 | 6.56E-01 | 7 | 5.45E-01 | MHV-68 |
| 5927 | KDM5A | 7 | 6.56E-01 | 7 | 5.45E-01 | MHV-68 |
| 7316 | UBC | 7 | 6.56E-01 | 7 | 5.45E-01 | MHV-68 |
| 3164 | NR4A1 | 7 | 6.56E-01 | 3 | 6.27E-01 | EBV |
| 11335 | CBX3 | 7 | 6.56E-01 | 2 | 7.12E-01 | EBV |
| 9318 | COPS2 | 6 | 6.90E-01 | 6 | 5.80E-01 | MHV-68 |
| 5693 | PSMB5 | 6 | 6.90E-01 | 3 | 7.15E-01 | MHV-68 |
| 3043 | HBB | 6 | 6.90E-01 | 4 | 5.68E-01 | EBV |
| 23062 | GGA2 | 5 | 7.23E-01 | 12 | 4.07E-01 | MHV-68 |
| 7402 | UTRN | 5 | 7.23E-01 | 9 | 4.84E-01 | MHV-68 |
| 10788 | IQGAP2 | 5 | 7.23E-01 | 6 | 5.80E-01 | MHV-68 |
| 10788 | IQGAP2 | 5 | 7.23E-01 | 4 | 5.68E-01 | EBV |
| 84726 | BAT2L | 4 | 7.76E-01 | 5 | 6.18E-01 | MHV-68 |
| 51100 | SH3GLB1 | 4 | 7.76E-01 | 2 | 7.12E-01 | EBV |
| 9454 | HOMER3 | 4 | 7.76E-01 | 2 | 7.12E-01 | EBV |
| 9463 | PRKCABP | 4 | 7.76E-01 | 0 | 1.00E+00 | EBV |
| 3843 | IPO5 | 3 | 8.13E-01 | 5 | 6.18E-01 | MHV-68 |
| 9416 | DDX23 | 3 | 8.13E-01 | 3 | 7.15E-01 | MHV-68 |
| 25801 | GCA | 3 | 8.13E-01 | 2 | 7.12E-01 | EBV |
| 23365 | ARHGEF12 | 2 | 8.95E-01 | 6 | 5.80E-01 | MHV-68 |
| 213 | ALB | 2 | 8.95E-01 | 3 | 7.15E-01 | MHV-68 |
| 4502 | MT2A | 2 | 8.95E-01 | 1 | 8.53E-01 | MHV-68 |
| 5359 | PLSCR1 | 2 | 8.95E-01 | 2 | 7.12E-01 | EBV |
| 29950 | SERTAD1 | 2 | 8.95E-01 | 0 | 1.00E+00 | EBV |
| 4188 | MDFI | 2 | 8.95E-01 | 0 | 1.00E+00 | EBV |
| 7450 | VWF | 2 | 8.95E-01 | 0 | 1.00E+00 | EBV |
| 6249 | RSN | 1 | 9.22E-01 | 2 | 8.01E-01 | MHV-68 |
| 25831 | HECTD1 | 1 | 9.22E-01 | 1 | 8.53E-01 | MHV-68 |
| 4924 | NUCB1 | 1 | 9.22E-01 | 1 | 7.91E-01 | EBV |
| 10616 | C20orf18 | 1 | 9.22E-01 | 0 | 1.00E+00 | EBV |
| 10197 | PSME3 | 1 | 9.22E-01 | 0 | 1.00E+00 | EBV |
| 2244 | FGB | 0 | 1.00E+00 | 2 | 8.01E-01 | MHV-68 |
| 10241 | CALCOCO2 | 0 | 1.00E+00 | 1 | 8.53E-01 | MHV-68 |
| 23499 | MACF1 | 0 | 1.00E+00 | 1 | 8.53E-01 | MHV-68 |
| 64746 | ACBD3 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 4041 | LRP5 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 9129 | PRPF3 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 22926 | ATF6 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 9482 | STX8 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 55755 | CDK5RAP2 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 4591 | TRIM37 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 3840 | KPNA4 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 4163 | MCC | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 4780 | NFE2L2 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 2804 | GOLGB1 | 0 | 1.00E+00 | 0 | 1.00E+00 | MHV-68 |
| 55072 | RNF31 | 0 | 1.00E+00 | 1 | 7.91E-01 | EBV |
| 30008 | EFEMP2 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 59277 | NTN4 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 11030 | RBPMS | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 9353 | SLIT2 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 2896 | GRN | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 1075 | CTSC | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 5598 | MAPK7 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10516 | FBLN5 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 972 | CD74 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 81628 | TSC22D4 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |
| 6124 | RPL4 | 0 | 1.00E+00 | 0 | 1.00E+00 | EBV |