Appendix 3:

Alignment of Herpes Virus Simplex-1 (HSV-1), Herpes Virus Simplex-2 (HSV-2),

```
HSV-1    ------------------MPFVGGAESGDPLGAGRPIGDDECEQYTSSVSLARMLYGGDL  42
HSV-2    MNVATCTHQTHHAARAPGATSAPGAASGDPLGARRPIGDDECEQYTSSVSLARMLYGGDL  60
VZV      ------------------------------MSPNTGESNAAVYASSTQLARALYGGDL  28
                                         *:.:.  *:**..*** ******

HSV-1    AEWVPRVHPKTTIERQQHGPVTFPNASAPTARCVTVVRAPMGSGKTTALIRWLREAIHSP 102
HSV-2    AEWVPRVHPKTTIERQQHGPVTFPDASAPTARCVTVVRAPMGSGKTTALIRWLGEAIHSP 120
VZV      VSWIKHTHPGISLELQLDVPVKLIKPGMSQTRPVTVVRAPMGSGKTTALLEWLQHALKA-  87
         ..*: :.**  ::* * . **.: ... . :* ****************:.** .*:::

HSV-1    DTSVLVVSCRRSFTQTLATRFAESGLVDFVTYFSSTNYIMNDRPFHRLIVQVESLHRVGP 162
HSV-2    DTSVLVVSCRRSFTQTLATRFAESGLPDFVTYFSSTNYIMNDRPFHRLIVQVESLHRVGP 180
VZV      DISVLVVSCRRSFTQTLIQRFNDAGLSGFVTYLTSETYIMG---FKRLIVQLESLHRVSS 144
         * ************** ** ::** .****::* .***.   *:*****:******..

HSV-1    NLLNNYDVLVLDEVMSTLGQLYSPTMQQLGRVDALMLRLLRICPRIIAMDATANAQLVDF 222
HSV-2    NLLNNYDVLVLDEVMSTLGQLYSPTMQQLGRVDALMLRLLRTCPRIIAMDATANAQLVDF 240
VZV      EAIDSYDVLILDEVMSVIGQLYSPTMRRLSAVDSLLYRLLNRCSQIIAMDATVNSQFIDL 204
         : ::.****:******.:**********::*. **:*: ***. *.:*******.*:*:*:

HSV-1    LCGLRGEKNVHVVVGEYAMPGFSARRCLFLPRLGTELLQAALRPPGPPSG-PSPDASPEA 281
HSV-2    LCSLRGEKNVHVVIGEYAMPGFSARRCLFLPRLGPEVLQAALRRRGPAGGAPPPDAPPDA 300
VZV      ISGLRGDENIHTIVCTYAGVGFSGRTCTILRDMGIDTLVRVIKR-SPEHEDVRTIHQLRG 263
         :..***::*:*.::  **  ***.* * :*  :* : *  .::  .*      .   .

HSV-1    RGATFFGELEARLGGGDNICIFSSTVSFAEIVARFCRQFTDRVLLLHSLTPLGDVTTWGQ 341
HSV-2    ---TFFGELEARLAGGDNVCIFSSTVSFAEVVARFCRQFTDRVLLLHSLTPPGDVTTWGR 357
VZV      ---TFFDELALRLQCGHNICIFSSTLSFSELVAQFCAIFTDSILILNSTRPLCNVNEWKH 320
            ***.**   **  *.*:*******:**:*:**:**  *** :*:*:*   *   :*. * :

HSV-1    YRVVIYTTVVTVGLSFDPLHFDGMFAYVKPMNYGPDMVSVYQSLGRVRTLRKGELLIYMD 401
HSV-2    YRVVIYTTVVTVGLSFDPPHFDSMFAYVKPMNYGPDMVSVYQSLGRVRTLRKGELLIYMD 417
VZV      FRVLVYTTVVTVGLSFDMAHFHSMFAYIKPMSYGPDMVSVYQSLGRVRLLLLNEVLMYVD 380
         :**::************  **..****:***.**************** *  .*:*:*:*

HSV-1    GSGARSEPVFTPMLLNHVVSSCGQWPAQFSQVTNLLCRRFKGRCDASACDTSLGRGSRIY 461
HSV-2    GSGARSEPVFTPMLLNHVVSASGQWPAQFSQVTNLLCRRFKGRCDASHADAAQARGSRIY 477
VZV      GSRTRCGPLFSPMLLNFTIANKFQWFPTHTQITNKLCCAFRQRCANAFTRS----NTHLF 436
         ** :*. *:*:*****..::  **  ..:*:** **  *: ** : :   .::::

HSV-1    NKFRYKHYFERCTLACLSDSLNILHMLLTLNCIRVRFWGHD--DTLTPKDFCLFLRGVHF 519
HSV-2    SKFRYKHYFERCTLACLADSLNILHMLLTLNCMHVRFWGHD--AALTPRNFCLFLRGIHF 535
VZV      SRFKYKHLFERCSLWSLADSINILQTLLASNQILVVLDGMGPITDVSPVQFCAFIHDLRH 496
         .:*:*** ****:* .*:**:***:* **: * : * : * .     ::* :** *::.::.
```

```
HSV-1   DALRAQRDLRELRCRDPEASLP---AQAAETEEVGLFVEKYLRSDVAPAEIVALMRNLNS 576
HSV-2   DALRAQRDLRELRCQDPDTSLS---AQAAETEEVGLFVEKYLRPDVAPAEVVALMRGLNS 592
VZV     SANAVASCMRSLR-QDNDSCLTDFGPSGFMADNITAFMEKYLMESINTEEQIKVFKALAC 555
        .*  .    :*.** :* ::.*.   ...  :::: *:****  .: . * : ::: * .

HSV-1   LMGRTRFIYLALLEACLRVPMATRSSAIFRRIYDHYATGVIPTINVTGELELVALPPTLN 636
HSV-2   LVGRTRFIYLVLLEACLRVPMAAHSSAIFRRLYDHYATGVIPTINAAGELELVALHPTLN 652
VZV     PIEQPRLVNTAILGACIRIPEALEAFDVFQKIYTHYASGWFPVLDKTGEFSIATITTAPN 615
         : :.*::  .:* **:*:* * .:  :*:::* ***:* :*.:: :**:.:.:: .: *

HSV-1   VTPVWELLCLCSTMAARLHWDSAAGGSGRTFGPDDVLDLLTPHYDRYMQLVFELGHCNVT 696
HSV-2   VAPVWELFRLCSTMAACLQWDSMAGGSGRTFSPEDVLELLNPHYDRYMQLVFELGHCNVT 712
VZV     LTTHWELFRRCAYIAKTLKWNPSTEGCVTQVLDTDINTLFNQHGDSLAQLIFEVMRCNVT 675
        ::. ***:  *: :*  *:*:. : *.   .   *: *:. * *   **:**: :****

HSV-1   DGLLLSEEAVKRVADALSGCP---PRGSVSETDHAVALFKIIWGELFGVQMAKSTQTFPG 753
HSV-2   DGPLLSEDAVKRVADALSGCP---PRGSVSETEHALSLFKIIWGELFGVQLAKSTQTFPG 769
VZV     DAKIILNRPVWRTTGFLDGCHNQCFRPIPTKHEYNIALFRLIWEQLFGARVTKSTQTFPG 735
        *. :: : .* *.:. *.**    *   :: :: ::**::** :***.:::********

HSV-1   AGRVKNLTKQTIVGLLDAHHIDHSACRTHRQLYALLMAHKREFAGARFKLRVPAWGR--C 811
HSV-2   AGRVKNLTKRAIVELLDAHRIDHSACRTHRQLYALLMAHKREFAGARFKLRAPAWGR--C 827
VZV     STRVKNLKKKDLETLLDSINVDRSACRTYRQLYNLLMSHRHSFSQQRYKITAPAWARHVY 795
        : *****.*: :  ***: .:*:*****:**** ***:*::.*:  *:*: .***.*

HSV-1   LRTHSSSANPNADIILEAALSELPTEAWPMMQGAVNFSTL 851
HSV-2   LRTHASGAQPNTDIILEAALSELPTEAWPMMQGAVNFSTL 867
VZV     FQAHQMHLAPHAEAMLQLALSELSPGSWPRINGAVNFESL 835
        :::*     *::: :*: *****.. :** ::*****.:*
```