**E1BS Issues (37):**

Not found with a threshold value of 1.0E-4:

* BPV11
* CcPV1
* CmPV1
* EaPV1
* EcPV2
* EePV1
* EhPV2
* FcPV1
* FgPV1
* FlPV1
* HPV-mKC5
* HPV-mKN3
* HPV-mSE355
* HPV-mTVMBSGc2450
* HPV-mw18c39
* HPV-mw34c11a
* HPV39
* HPV66
* HPV85
* HPV91
* HPV96
* HPV107
* HPV130
* HPV133
* HPV135
* HPV148
* HPV166
* HPV172
* MpPV1
* MrPV1
* PaPV1
* PaPV2
* PePV1
* PsuPV1
* RnPV2
* SaPV1
* TmPV4

**With conserved.fa**

**Genes not found by PuMA (without spliced, 100):**

* BPV7, E6
* CcPV1, E7
* CcaPV1, E5
* CgPV1, E5\_BETA
* CmPV1, E7
* FgPV1, E6
* FgPV1, E7
* FlPV1, E7
* HPV2, E5\_BETA
* HPV3, E5\_BETA
* HPV6, E5\_DELTA
* HPV6, E5\_GAMMA
* HPV7, E5\_DELTA
* HPV10, E5\_BETA
* HPV11, E5\_DELTA
* HPV11, E5\_GAMMA
* HPV13, E5\_DELTA
* HPV13, E5\_GAMMA
* HPV16, E5\_ALPHA
* HPV18, E5\_ALPHA
* HPV27, E5\_BETA
* HPV28, E5\_BETA
* HPV29, E5\_BETA
* HPV31, E5\_ALPHA
* HPV33, E5\_ALPHA
* HPV34, E5\_ALPHA
* HPV35, E5\_ALPHA
* HPV39, E5\_ALPHA
* HPV40, E5\_DELTA
* HPV43, E5\_DELTA
* HPV44, E5\_DELTA
* HPV44, E5\_GAMMA
* HPV45, E5\_ALPHA
* HPV52, E5\_ALPHA
* HPV54, E5
* HPV57, E5\_BETA
* HPV58, E5\_ALPHA
* HPV59, E5\_ALPHA
* HPV61, E5\_BETA
* HPV62, E5\_BETA
* HPV67, E5\_ALPHA
* HPV68, E5\_ALPHA
* HPV70, E5\_ALPHA
* HPV71, E5\_BETA
* HPV72, E5\_BETA
* HPV73, E5\_ALPHA
* HPV74, E5\_DELTA
* HPV74, E5\_GAMMA
* HPV77, E5\_BETA
* HPV78, E5\_BETA
* HPV81, E5\_BETA
* HPV83, E5\_BETA
* HPV84, E5\_BETA
* HPV85, E5\_ALPHA
* HPV86, E5\_BETA
* HPV87, E5\_BETA
* HPV89, E5\_BETA
* HPV90, E5\_BETA
* HPV91, E5\_DELTA
* HPV94, E5\_BETA
* HPV97, E5\_ALPHA
* HPV102, E5\_BETA
* HPV106, E5\_BETA
* HPV114, E5\_BETA
* HPV117, E5\_BETA
* HPV125, E5\_BETA
* HPV160, E5\_BETA
* HPV-mw03c65, E10
* MfPV3, E5\_EPSILON
* MfPV3, E5\_ZETA
* MfPV4, E5\_EPSILON
* MfPV4, E5\_ZETA
* MfPV5, E5\_EPSILON
* MfPV5, E5\_ZETA
* MfPV6, E5\_EPSILON
* MfPV6, E5\_ZETA
* MfPV7, E5\_EPSILON
* MfPV7, E5\_ZETA
* MfPV8, E5\_EPSILON
* MfPV8, E5\_ZETA
* MfPV9, E5\_EPSILON
* MfPV9, E5\_ZETA
* MfPV10, E5\_EPSILON
* MfPV10, E5\_ZETA
* MfPV11, E5\_EPSILON
* MfPV11, E5\_ZETA
* MfuPV1, E5\_EPSILON
* MfuPV1, E5\_ZETA
* MmPV1, E5\_EPSILON
* MmPV1, E5\_ZETA
* MscPV2, E7
* OcPV1, E10
* PaPV1, E7
* PhPV1, E5\_EPSILON
* PhPV1, E5\_ZETA
* PpPV1, E5\_DELTA
* PpPV1, E5\_GAMMA
* RalPV1, E5
* SaPV1, L2
* SfPV1, E10

**Genes not found by PuMA (with spliced 1023)**

**PuMA found genes wrong (58, includes E4):**

* AaPV1, E6
* BPV7, URR
* BgPV1, URR
* CPV6, E4
* CdPV2, E4
* CgPV1, E2
* CgPV1, URR
* EcPV2, E4
* EcPV6, E4
* EcPV7, E4
* EhPV1, E4
* EsPV2, L1
* FcPV1, E4
* FcPV1, E6
* FcPV1, E9
* FcaPV4, E4
* FgPV1, URR
* GcPV1, E5
* HPV1, E4
* HPV3, E7
* HPV19, E4
* HPV20, E4
* HPV25, E4
* HPV34, E4
* HPV43, L1
* HPV48, E1
* HPV73, E4
* HPV77, L2
* HPV91, L1
* HPV96, E6
* HPV96, URR
* HPV101, E4
* HPV108, E1
* HPV118, E4
* HPV118, L1
* HPV124, E4
* HPV131, E1
* HPV134, E1
* HPV152, L1
* HPV167, L1
* HPV167, URR
* HPV178, E7
* HPV-mDysk3, E1
* HPV-mKN2, E4
* MfPV5, E1
* MmiPV1, E4
* MmuPV1, E4
* MpPV1, L1
* MsPV1, E4
* PaPV1, E9
* PePV1, E9
* PphPV1, E4
* PsuPV1, E4
* RnPV1, E4
* SaPV1, L1
* TmPV1, L1
* UuPV1, E2
* UuPV1, E4

**With blast db**

**Genes not found by PuMA (without spliced, 182)**

**Genes not found by PuMA (with spliced,1105)**

**PuMA found genes wrong (69, includes E4):**