

File S1. New annotation of *ZmOFP42* and *PtOFP5*.

>GRMZM2G436659 genomic sequence

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AVGDDEPQLDTSSIVLS  
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DEVVYDNERLYPDLVKSHPTLLLDNRPAQFVDTDQEEEEENIDMGMSGHEDDEDRPVINYDKDNPSLAEGTIFPSMVDC\*

Previous exons are highlighted in yellow, new exon is underlined.

Predicted protein(s):

>FGENESH: [mRNA] 1 1 exon (s) 1 - 1029 1029 bp, chain +  
ATGGTCAAGAAGCAACAGCTTGCTGTTGGCGGCTCACTTGTATTCTCAGTAGCAGCAGC  
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TCTTGCTGA

>FGENESH: 1 1 exon (s) 1 - 1029 342 aa, chain +  
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SGDFSFTSTASSDAEAVIIQALRSRLLYEPADHMDDHDDASCCRLIKOPPHNKQSI SRQ  
KQAAVGDDEPQLDTSSIVLSSGSGKANKAPVLDLVT TAEALATFCGATAMSVESHNPYRD  
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>POPTR\_0016s07360 genomic sequence

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ACCACAAACCATTTCTCG  
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NGSCCSARERLVGVQNH  
SKDDLRLQLDCFLQLNSPYYHGIIVRAFTEIWNVSVRSNTTGTGSEKQLHYYYGC\*

Previous exons are highlighted in yellow, new exon is underlined.

Predicted protein(s):

>GENESH:[mRNA] 1 1 exon (s) 81 - 674 594 bp, chain +

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TACTCAAAGGATGATCTTAGACAGCTCCTTGATTGTTTCTTGCAGCTAAATTCGCCCTAC  
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>FGENESH: 1 1 exon (s) 81 - 674 197 aa, chain +

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DDPYLDFRHSMLQMILEKQIYSKDDLRLQLDCFLQLNSPYYHGIIVRAFTEIWNGVFSVR  
SNTTTGSEKQLHYYYGC

File S2: Alignment of the OVATE domain for the phylogenetic analysis

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      10      20      30      40      50      60      70      80
ZmOFFP43 VETY--AS-DPRAQFLSMAGMAAACG---A---EGMPEPE--YR-EFMEELLSCYLDEN---DRRVERHVLAFAD---LTAR
MgOFFP10 VCVY--SS-KFYDFEYSSMEMVLS-K---L---DQ-DLTI--DL-EYMEELLSYLRLN---EKKHK--ILAFAD---VIEV
PpaOFFP4 DSAT--TS-NSNNND-AKDDIMVES-R---L---RNH-AKV--EW-NEMEELLECYLNLN---EKSYRFILSAFSD---LIVD
OsOFFP7 VPTY--SP-DEHADFLRSMEMVALR---L---DARRR-G--DR-ARLEELLCYLALN---DRRAHRYVVSAPTD---LLLR
ZmOFFP23 VPTY--SP-DEHADFLRSMEMAAALR---L---DARRR-G--DR-ARLEELLCYLALN---DRRAHRYVVSAPTD---LLLR
OsOFFP31 VQVS--TA-APREFLKSMDEMVDAMG---L---DVARRGG--DR-ARLEELLSYTALN---DRDALPDIICAFID---LLLA
ZmOFFP22 VLVS--TD-APRADFRKSMEMVEALE---L---DPRRDA--DL-ARLHLLCYTALN---ERDALRDIICAFAD---IMCL
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ZmOFFP34 VVLF--SM-DPYDFFRSMQNI--K---L---HHGCACQP-LW-DFLEELLFYYLQLN---DKAVHK--ILAFAD---LTAG
PpaOFFP6 VRRF--SS-NPYDFFRSMEMLEANR-DHHMLVGHDDHHHSTSDV-EYLEELLCYLSLN---PKHHKIISAFID---IVIC
CpOFFP5 VKKY--SP-DPYDFFRCSMCEMEAQR---LR-----DVK-TDL-EFLLELLVRIMSLN---SKQHKEIIIAFAD---ILIS
AtOFFP12 VKHYVCS-DPYDFFRSMCEMIDAVT-NAGDLR-----R--Y-EFLLELLSYLSLN---AADTHKEIIIAFAD---IIVS
AtOFFP16 -QH-VDSP-DPLTDFFRSMCEMIDAAI-DAGELSR-----DPN-DGY-DFLDELLLTYLSLN---PADTHKEVIIAFSD---IIVS
AtOFFP11 MKH-IESP-DPYDFFRSMCEMVEAR---DLTR-----DVV-ADR-EYLEELLFCYLALN---PKTHKEVIIAFAD---TILW
ArCOFFP7 IRTY--SP-DPYDFFRSMCEMVEAR---ELF-----DVK-ADW-NSLEELLCYLALN---PKTHKEIIIAFAD---VLIT
MgOFFP13 VQTY--SP-DPYDFFRKSMEMFEAR---DPT-----DAK-ADW-EFLNELLLCYLALN---PKTHKEIVCAFAD---VI--
CpOFFP10 VPTY--SP-DPYDFFRKSMEMVEAR---ELK-----DAK-GRW-EYLQELLVCYLALN---PKSAHKEITCAFAD---VIVT
VvOFFP5 VHTY--SP-NPYDFFRSMCEMFEAR---ELR-----DVA-ADW-DYLEELLLCYLALN---PKTHKEIIIAFAD---IIVC
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PtOFFP21 IKKY--SL-DPYDFFRKSMCEMFEAR---EIR-----DVR-ANW-DYLEELLSCYLRLN---PKTHKEIIIAFAD---IIVC
StOFFP17 VQTY--SP-DPYDFFRSMCEMVEAH---ELT-----NVK-ANW-GELLELLCYLALN---PKTHKEYIIICAFYSD---IVVS
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StOFFP21 LVTV--SP-SPYDFFRCSMCEMFEAR---LN-----DQGK-INW-EFMEELLECYLALN---DKRSHRYIILSAFVD---QIVV
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AtOFFP18 LSLE--SN-DPYDFFRKSMEMVEVHV---L-----HEDW--ISLERLLFWFLRVN---VKASERYIIFAFVD---IVLN
PtOFFP18 LAME--SE-DPYDFFRSMEMIVETCG---L-----KNW--EDVEELLAWYLRN---RQHCFIIIAFVD---LISA
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OsOFFP5 VAFE--SE-DPYDFFRASMEEMVAHG---V-----GNW--CWLEELLGWYLRAN---GRDTHAIVAFID---VIVA
ZmOFFP39 VAFD--SA-DPYDFFRASMEEMVAHG---M-----GEW--EWLERLLAWYLGAN---GRDTHPAIVAFID---IVVT
OsOFFP14 VAFD--SE-DPYDFFRASMEEMVAHG---V-----GEW--CWLEELLGWYLRAN---GRDTHAIVAFID---IVVS
MgOFFP42 MSVE--SH-NPYDFFRCSMCEMVASQQ---G-----TTRCW--FWLEELLGWYLRAN---GKTHALIVAFVD---LIVA
MgOFFP14 LEME--SD-NPYDFFRKSMCEMVERDQ---A-----NNNLVKDSW--DYLEELLGWYLRN---VKINEIVCAFVD---LUNG
OsOFFP28 MTIE--SS-NPYDFFRSMEMAVTSGG---G-----GGGADEW--FWLEELLGWYLRAN---VKSTHGLIVCAFID---IIVS

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|          | 10    | 20 | 30        | 40      | 50 | 60     | 70       | 80          |       |             |           |      |      |
|----------|-------|----|-----------|---------|----|--------|----------|-------------|-------|-------------|-----------|------|------|
| OsOFF12  | MSID  | SA | DPYDFRRSM | EMVMSHM | S  | GGG    | HDW      | GWLEEMLGWYL | RAN   | GKRTHGFI    | AFVD      | LVVA |      |
| ZmOFF25  | LSIE  | SA | DPYDFRRSM | EMVLSHG | A  | DDW    | VWLERM   | LGWYL       | RAN   | GEKTHGLI    | AFVD      | LLVA |      |
| SLOFP26  | LAIK  | SA | DPYDFRRSM | EMVLSHG | A  | GDDW   | AWLERM   | LGWYL       | RAN   | GKRTHGFI    | AFVD      | LLVA |      |
| SLOFP8   | LAME  | SK | DPYDFRRSM | EMVESQG | I  | RDW    | DNLQELL  | LACYL       | RLN   | GEVNHGFV    | AFVD      | LLVE |      |
| StOFF13  | LAME  | SK | DPYDFRRSM | EMVESQG | I  | RDW    | DNLQELL  | LACYL       | RLN   | GEVNHGFV    | AFVD      | MLME |      |
| SLOFP15  | MGLD  | SN | DFVDFRRSM | EMVEAYE | I  | RDW    | ENLEELL  | TCYL        | RVN   | CKSNHGMV    | AFVD      | LLVN |      |
| StOFF15  | MGLD  | SN | DFVDFRRSM | EMVEAYE | I  | KGW    | ENLEELL  | TCYL        | RVN   | CKSNHGMV    | AFVD      | LLVN |      |
| MgOFF22  | MAVD  | SV | DFVDFRRSM | EMVAAHG | L  | REW    | DCLEEM   | LTCFL       | RVN   | GKSNHGMV    | AFVD      | LLLH |      |
| AtOFF13  | VAME  | SE | DPYDFRRSM | EMVTSHG | L  | ARDW   | ESLEEM   | LAWYL       | RMN   | GRKSHGVI    | AFVD      | LLSG |      |
| SLOFP13  | LALE  | SE | DPYDFRRSM | EMVOTHE | I  | RDW    | ESLQELL  | LGWYL       | RMN   | GKRNHGFI    | AFVD      | LLIG |      |
| StOFF14  | LALE  | SE | DPYDFRRSM | EMVOTHE | I  | RDW    | ESLQELL  | LGWYL       | RMN   | GKRNHGFI    | AFVD      | LLIG |      |
| CpOFF4   | LAME  | SD | NPYDFRRSM | EMVEWHG | L  | REW    | EGLEELL  | SWYL        | RVN   | RKRNHGFI    | AFVD      | LFLT |      |
| AcOFF8   | LAME  | SE | DPYDFRRSM | EMVEAHG | F  | RDW    | EYLEELL  | VWYL        | RVN   | GKRNHGFI    | AFVD      | LLVS |      |
| MgOFF21  | VAME  | SE | DPYDFRRSM | EMVESHG | L  | EDW    | DCLEELL  | RWYL        | RMN   | GKRNHGFI    | AFVD      | LLVG |      |
| PpaOFF8  | LAME  | SE | DPYDFRRSM | EMVESHG | L  | RDW    | ECLEELL  | GWYL        | RVN   | RKRNHGFI    | AFVD      | LLVA |      |
| VvOFF8   | LAME  | SE | DPYDFRRSM | EMVESHG | L  | RDW    | DCLEELL  | GWYL        | RVN   | GKRNHGFI    | AFVD      | LLVG |      |
| PtOFF20  | LAME  | SE | DPYDFRRSM | EMVESHG | L  | RDW    | DCLEELL  | GWYL        | RVN   | GKRNHGFI    | AFVD      | LLVG |      |
| PtOFF22  | LEME  | SE | DPYDFRRSM | EMVESHG | L  | RDW    | DCLEELL  | GWYL        | RVN   | GKRNHGFI    | AFVD      | LLCG |      |
| PtOFF3   | LSME  | SQ | DPYDFRRSM | EMVEAHG | L  | TDW    | EGLEELL  | SCYL        | RVN   | GKSNHGFI    | AFVD      | LLVG |      |
| PtOFF6   | LSMD  | SR | DPYDFRRSM | EMVEAHG | L  | TDW    | EGLEELL  | SCYL        | RVN   | GKSNHGFI    | AFVD      | LLVG |      |
| CpOFF8   | LSME  | SQ | DPYDFRRSM | EMVLAHG | L  | RDW    | EGLEELL  | CWYL        | RVN   | GKSNHGFI    | AFVD      | LLVG |      |
| PpaOFF3  | LSMD  | SP | DPIDFRRSM | EMVEAHG | L  | RDW    | DELEELL  | CWYL        | RVN   | AKSNHGVI    | AFVD      | LLVG |      |
| OsOFF10  | LTVE  | SE | DPYDFRRSM | EMVAAHG | L  | RDW    | EGLEELL  | LAWYL       | RLN   | AKGVHCVI    | AFVD      | MLVS |      |
| ZmOFF16  | VTVE  | SK | DPYDFRRSM | EMVAAHG | L  | RDW    | EALQELL  | LAWYL       | RLN   | AKGVHAAI    | AFVD      | LLVS |      |
| ZmOFF5   | VALD  | SE | DFVDFRRSM | EMVAAHG | L  | RDW    | AALQEM   | LLWYL       | RIN   | GKHNHALI    | AFVD      | LLVG |      |
| ZmOFF31  | VALD  | SD | DFVDFRRSM | EMVAAHG | L  | RDW    | AALQEM   | LLWYL       | RIN   | GKHNHALI    | AFVD      | LLVG |      |
| ZmOFF18  | VAVD  | SG | DPYDFRRSM | EMVSAHG | L  | RDW    | AQLEELL  | LAWYL       | RIN   | GKQEHHLI    | AFVD      | LLLG |      |
| OsOFF19  | VAVE  | SE | DPYDFRRSM | EMVAAHG | L  | RDW    | DALEELL  | SWYL        | RVN   | GKHNHPLI    | AFVD      | LLLA |      |
| OsOFF18  | VAVE  | SE | DPYDFRRSM | EMVAAHG | L  | RRW    | DALEELL  | VWYL        | RVN   | GKHNHPLI    | AFVD      | LLVG |      |
| OsOFF3   | VVKR  | SS | DPYDFRRSM | EMIAEGA | A  | CGGGD  | GDGEL    | LAERILL     | LETYL | VLN         | SPRHYPAIL | AFAD | VRET |
| ZmOFF6   | VVKR  | SA | DPYDFRRSM | EMIAEWP | A  | GGAGGG | DDEGE    | HAERILL     | LETYL | VLN         | SPRHYPAIL | AFAD | VRET |
| OsOFF8   | VVKR  | SD | DPRDFRRSM | EMVVGRA | I  | YDA    | DGLEELL  | RCFI        | LALN  | HQRHRRDI    | AFGD      | VWEA |      |
| ZmOFF27  | VVKR  | SD | DPRDFRRSM | EMVVGRA | I  | YDA    | DGLEELL  | RCFI        | LALN  | DRRHRPDI    | AFGD      | VWEA |      |
| OsOFF2   | VVKR  | SS | NPYDFRRSM | EMVVERR | I  | CSV    | PEMEELL  | GSYL        | SLN   | SPQEHPAI    | AFED      | VWEA |      |
| ZmOFF8   | VVKR  | SS | NPYDFRRSM | EMVLGRR | I  | GSV    | GMMEELL  | GSYL        | SLN   | SPRHYPAIL   | AFED      | VWEA |      |
| ZmOFF2   | VVKR  | SS | NPYDFRRSM | EMVVERR | I  | ASV    | GMMEELL  | GSYL        | SLN   | SPRHYPAIL   | AFED      | VWEA |      |
| OsOFF29  | VVKR  | SS | DPYDFRRSM | EMIVERQ | V  | FAA    | AELERILL | RSYL        | SLN   | PPRIHEVIL   | AFSD      | IWVV |      |
| ZmOFF24  | VVKR  | SR | DPYDFRRSM | EMIMGRQ | V  | FGA    | AELQELL  | LLRSYL      | LALN  | APRHHEVIL   | AFSD      | IWVV |      |
| OsOFF1   | VVKR  | SR | DPYDFRRSM | EMVVGRO | L  | FGA    | AELERILL | RSYL        | SLN   | APRHHEVIL   | AFSD      | IWVV |      |
| ZmOFF36  | VVKR  | SR | DPYDFRRSM | EMIVGRO | L  | LGA    | PDMERILL | RSYL        | SLN   | APRHHEVIL   | AFSD      | IWVV |      |
| MgOFF19  | VVKR  | SS | DFHDFRRSM | EMIVERQ | I  | FGA    | DDLEELL  | LCFL        | LALN  | ATSYHGII    | QVFTE     | ICQT |      |
| SLOFP4   | VVKR  | TN | DFHDFRRSM | EMIVERQ | I  | FGL    | RDLEELL  | LCFL        | LALN  | SPSFHRII    | FEVFAE    | IFET |      |
| StOFF6   | VVKR  | TN | DFHDFRRSM | EMIVERQ | I  | FGL    | RDLEELL  | LCFL        | LALN  | SPSFHRII    | FEVFAE    | ICET |      |
| SLOFP7   | VVKR  | SK | DPYDFRRSM | EMIMENQ | I  | FGA    | RELEELL  | LCFL        | LALN  | SQYHHEVIL   | IDVFTE    | ICEA |      |
| StOFF7   | VVKR  | SK | DPYDFRRSM | EMIMENQ | I  | FGA    | RELEELL  | LCFL        | LALN  | SQYHHEVIL   | IDVFTE    | ICEA |      |
| AtOFF8   | VVKR  | SK | DPYDFRRSM | EMIVERQ | I  | FAP    | AELQELL  | LCFL        | LALN  | SRQEHFVI    | QVFELE    | IYAT |      |
| CpOFF3   | VVKR  | SS | DPYDFRRSM | EMIVERK | I  | FGV    | RELEELL  | LCFL        | LALN  | SHBHHRIV    | EVFEME    | IYEA |      |
| MgOFF9   | VVKR  | SS | DPYDFRRSM | EMIVERE | I  | FAA    | RDLEELL  | LCFL        | LALN  | SCRHHEVIV   | QVFAE     | IWEA |      |
| VvOFF2   | VVKR  | SS | DPYDFRRSM | EMIVERQ | I  | FAA    | RDLEELL  | LCFL        | LALN  | SSHHEHIII   | EVFETE    | IWEA |      |
| PtOFF2   | VVKR  | SS | DPYDFRRSM | EMIVERQ | I  | FAA    | RDLEELL  | LCFL        | LALN  | SYBHHEHIII  | EVFEME    | IWEA |      |
| PtOFF12  | VVKR  | SS | DPYDFRRSM | EMIVERQ | I  | FAA    | RDLEELL  | LCFL        | LALN  | SYBHHEHIII  | EVFEME    | IWEV |      |
| AcOFF9   | VVKR  | SS | DPYDFRRSM | EMIVERQ | I  | FSA    | RDLEELL  | LCFL        | LALN  | SSYHHEHIII  | EVFETE    | IWEV |      |
| PpaOFF13 | VVKR  | SS | DPYDFRRSM | EMIVERQ | I  | FSA    | QDLEELL  | LCFL        | LALN  | SSLEHHEHIII | EVFETE    | IWEA |      |
| CpOFF6   | VVKR  | SS | EPYDFRRSM | EMILERQ | L  | FGA    | RELEELL  | RCFL        | LALN  | TTQYHCVI    | AFSD      | IWEV |      |
| MgOFF12  | VVKR  | SA | DPYDFRRSM | EMILERQ | I  | FEP    | AELEELL  | MSFL        | LALN  | SRMHHEHIII  | FAFTE     | ILKE |      |
| PtOFF23  | ----- | SA | DFVDFRRSM | EMILETQ | I  | FEA    | EDLEELL  | LOWRQS      | ----- | HGVIV       | AFLE      | IWEF |      |
| PtOFF13  | VVKR  | SQ | DFHDFRRSM | EMILERQ | I  | FEA    | EDLEELL  | LCFL        | LALN  | SRQYHCVI    | AFSE      | VWEI |      |
| SLOFP5   | IVKR  | SV | DPYDFRRSM | EMIMERE | M  | FEA    | EDLEELL  | LCFL        | LALN  | SRHHEHIII   | AFTE      | IWEE |      |
| StOFF3   | IVKR  | SA | DPYDFRRSM | EMILERE | M  | FEA    | EDLEELL  | LCFL        | LALN  | SRHHEHIII   | AFTE      | IWEE |      |
| VvOFF3   | VVKR  | SK | DPYDFRRSM | EMIMERE | M  | FET    | KDLEELL  | LCFL        | LALN  | SPQEHGII    | AFSV      | VWEG |      |
| AtOFF7   | VVKR  | SE | DPYDFRRSM | EMIVERK | M  | FEV    | AELEELL  | SCFL        | LALN  | AKRHHEHIII  | AFSE      | IWA  |      |
| SLOFP1   | IVKR  | SQ | DPYDFRRSM | EMILERE | M  | FEK    | NELEELL  | LCFL        | LALN  | GKHYHCVI    | AFSD      | IWET |      |
| StOFF1   | IVKR  | SQ | DPYDFRRSM | EMILENE | M  | FEK    | NELEELL  | LCFL        | LALN  | GKHYHCVI    | AFSD      | IWET |      |
| SLOFP14  | IVKR  | SE | DPYDFRRSM | EMILERK | I  | FEK    | NDLEELL  | LCFL        | LALN  | AKNCHCVI    | AFSE      | IWET |      |
| StOFF2   | IVKR  | SE | DPYDFRRSM | EMILERK | M  | FEK    | NDLEELL  | LCFL        | LALN  | AKNCHCVI    | AFSE      | IWKT |      |
| MgOFF15  | VVKR  | SD | EPYDFRRSM | EMIVERQ | M  | FEE    | RELEELL  | LCFL        | LALN  | SRHYHCVI    | AFSE      | IWEV |      |
| PpaOFF7  | VVKR  | SE | DPYDFRRSM | EMIMERE | I  | FEA    | RELEELL  | LCFL        | LALN  | SRHYHCVI    | AFSE      | IWEL |      |
| CpOFF1   | VVKR  | SE | EPYDFRRSM | EMILERE | M  | FEG    | RDLEELL  | LCFL        | LALN  | SRQFHAAI    | AFSD      | IWEA |      |
| PtOFF14  | VVKR  | SE | DPYDFRRSM | EMILERE | M  | FEE    | KDLEELL  | LCFL        | LALN  | SREHHEHIII  | AFSE      | IWET |      |
| PtOFF15  | VVKR  | SE | DFVDFRRSM | EMILERE | M  | FEE    | KDLEELL  | LCFL        | LALN  | LREHHEHIII  | AFSE      | IWDT |      |
| VvOFF4   | VVKR  | SE | DPYDFRRSM | EMILERQ | M  | FEE    | KDLEELL  | LCFL        | LALN  | SRHHEHIII   | AFTE      | IWDV |      |
| PpaOFF5  | VVKR  | SE | DPYDFRRSM | EMILERQ | M  | FDE    | RELEELL  | LCFL        | LALN  | SREHHEHIII  | AFAE      | IWEA |      |





|           | 10   | 20                     | 30 | 40 | 50                 | 60 | 70                | 80   |
|-----------|------|------------------------|----|----|--------------------|----|-------------------|------|
| ZmOFFP30  | VVRR | TR-DPQRAFRASVEMIASGE   | GP |    | AA-P-EELEELLACYSLN |    | ADEFHOCTVKVERQ    | VWFE |
| OsOFFP22  | VVRR | TS-DPQREFRASVEMIASKR   | I  |    | GRP-EELEELLACYSLN  |    | ADEFHOCTVKVERQ    | VWFE |
| ZmOFFP29  | VVRR | TR-DPQRAFRASVEMIASKR   | M  |    | VGRP-DELEELLACYSLN |    | ADEFHOCTVKVERQ    | VWFE |
| MgOFFP3   | VVKS | SF-DPQDFRDSMTEMIRERG   | I  |    | FRP-EDLEELLACYLTLN |    | CDEYHCVIISVFERQ   | VWME |
| SIOFP3    | IMKS | SF-DPQDFRDSMTEMITQRG   | I  |    | KSS-EELEELLACYLTLN |    | CDEYHCVIISVFERQ   | VWFE |
| StOFFP12  | IMKS | SF-DPQDFRDSMTEMITQRG   | I  |    | KSS-EELEELLACYLTLN |    | CDEYHCVIISVFERQ   | VWFE |
| AcOFFP2   | VTKC | SF-NPQDFRDSMTEMIVEKG   | L  |    | WSP-EELEELLACYSLN  |    | SVEYHOLTIKVEQQ    | IWLD |
| MgOFFP1   | VRKC | SF-NPQDFRDSMTEMIVEKR   | I  |    | QRP-EELEELLVSYLTLN |    | SDVMHNLTIKVEQQ    | VWLE |
| AtOFFP5   | VVKC | SS-DPQDFRDSMTEMIMENG   | I  |    | NHP-EELEELLVCYLRLN |    | TDEYHCVIISVFEQQ   | VHND |
| CpOFFP9   | VVKC | SS-DPQDFRDSMTEMIMEKK   | I  |    | NQP-QELEELLACYLALN |    | SDEYHOLTIKVEWQ    | VWLD |
| VvOFFP7   | VVKS | SL-DPQDFRDSMTEMIMEKG   | I  |    | SQP-EELEELLACYLTLN |    | SDEYHOLTIKVERQ    | VWFG |
| PtOFFP9   | VVKT | SF-DPQDFRDSMTEMIEEKR   | I  |    | SRS-EELEELLACYLTLN |    | ADEYHOLTIKVERQ    | VWFD |
| PpaOFFP2  | VVKC | SF-DPQDFRDSMTEMIMEKK   | I  |    | TQP-EDLEELLACYLTLN |    | SDEYHOLTIKVERQ    | VWFD |
| OsOFFP13  | VVKA | SA-EPARDFRESVEMVVGNG   | M  |    | RSP-EDLEELLECYLSLN |    | AREYHCVIMEAFERG   | VWVE |
| ZmOFFP19  | VVKA | SA-DPLDFRESVQCMIVEND   | M  |    | SAP-EDLEELLECYLSLN |    | SMEYHCVIIVEVERE   | IWLQ |
| OsOFFP9   | VVLE | ST-EPELELVDSMTEMLECTNG | V  |    | RRL-EDLQELLACYSLN  |    | AAEHRTTIVALERRVVI | VWIH |
| ZmOFFP20  | VVKT | SS-DPERELAESMSEMVVANG  | I  |    | RSS-EDLEELLACYLALN |    | AAEHRAVVAEFRR     | IWLL |
| OsOFFP16  | VVKE | SA-DPEEDFLESMEEMTAAND  | V  |    | RSP-RDLEELLACYLALN |    | AAEHRAIVGAFRR     | AWLH |
| ZmOFFP14  | VVKE | SA-DPEEDFLESMEEMTANG   | V  |    | RSP-RGLEELLACYLALN |    | AAEHRAIVVAFRR     | AWLH |
| ZmOFFP38  | VVVE | SA-DPEEDFLESMEEMATANG  | V  |    | RSP-RGLEELLACYLALN |    | AAEHRAIVVAFRR     | AWMH |
| PpOFFP2   | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | REA-DDLEELLKCYLSLN |    | EAEYHNVIVDVFTD    | VWHE |
| PpOFFP3   | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | RET-GDLEELLKCYLSLN |    | EAEYHNVIVDVFTD    | VWHE |
| PpOFFP4   | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | QET-CDLEELLKCYLSLN |    | EAEYHNVIVDVFTD    | VWHE |
| PpOFFP8   | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | QET-GDLEELLKCYLSLN |    | EAEYHNVIVDVFTD    | VWHE |
| PpOFFP6   | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | QQT-SDLEELLKCYLALN |    | EPEYHCVIIVDFSD    | VWHE |
| PpOFF1    | VVES | SY-DPYNDFRDSMTEMIVDQD  | I  |    | QQT-SDLEELLKCYLALN |    | EPEYHCVIIVDFSD    | VWHE |
| PpOFF5    | LAKD | SS-DPYNDFRDSMTEMMEKKN  | L  |    | WORQDELQDLLCFLFLN  |    | QPIHHLIHOAFSD     | VVSY |
| PpOFF7    | LAKD | SS-DPYNDFRDSMTEMMEKKN  | L  |    | WORQDELQDLLCFLFLN  |    | QPMHQLIHOAFSD     | VVCN |
| PpOFF9    | LIKH | SS-DPYNDFRDSMTEMIEBEG  | L  |    | QCEAELEELFQYLDLN   |    | PKGHEVLHKVIGD     | IRTD |
| SmOFFP6   | VEKA | SV-NPYDFRDSMTEMILRKG   | L  |    | FHY-RDLEELLRTYLALN |    | NEEHOLTIIRVFTD    | LWHQ |
| SmOFF5    | --KY | SH-NPYDFRDSMTEMIREKG   | L  |    | QQW-CDLEELLFCYLSLN |    | SPEFHEVIRQSESD    | VWQD |
| SmOFF4    | VMLV | SS-NPYDFRDSMTEMIEEKR   | L  |    | NKA-ADLEELLECYLALN |    | PPGFHEVIVQVFTD    | LWLQ |
| SmOFF3    | VAKF | SV-DPYRDFRDSMTEMISAANG | L  |    | EKM-SEFRELLOFYLALN |    | PEEHATIMEVETE     | LFWH |
| AtOFFP10  | MAKE | SI-NPFDYKKSMMQMIIEERY  | I  |    | ETE-SELKELLRCFLDIN |    | PSQHNLIIVRAFVD    | VCSH |
| SmOFFP1   | IVKQ | SE-DPQDFRDSMTEMIKAKN   | I  |    | KSD-RELVLNLCYLSLN  |    | APKHPTIIDAFAK     | VCPH |
| OsOFFP24  | VDRR | TS-DPREFFRSTAEVITAKR   | M  |    | AEP-AELRALLNCYVSVN |    | AREHRAATLEAFHE    | VCSG |
| ZmOFFP15  | EDRR | TH-DPLEEFFRSTAEVIAAKR  | M  |    | AEP-AELRALLNCYVSVN |    | AREHRAATLQAFHE    | VCSV |
| ZmOFFP40  | EDRR | TH-EPREFFRSTAEVIAAKR   | M  |    | AEP-AELRALLNCYVSVN |    | AREHRAATLQAFHE    | VCSA |
| AcOFFP4   | MDKY | SY-NPSEDFKASMEVITANR   | I  |    | NGI-KELRCVLLCYLSMN |    | SVEYRPIILQVEHK    | VCAE |
| PtOFFP10  | MEKS | SY-DPREDFRDSMTEMIMANR  | L  |    | QEP-KDLRSLLNYVMSMN |    | SEEHCMILEVEFHE    | VCTN |
| PpaOFFP12 | MEKC | SY-DPREDFRDSMTEMIMANR  | I  |    | EFP-KDLRSLLNYVMSMN |    | SEEHGIIIIEVEFHE   | VCSN |
| MgOFFP6   | MEKS | SY-DPREDFRDSMTEMICGNS  | MI |    | REA-KDLRELLNCYLRLN |    | SEEFRCVILEVEYD    | VCSN |
| PpaOFFP15 | IVKY | ST-DPIEDYRESMTEMIRYEG  | V  |    | CDW-NDMREIVYCYVALN |    | PPFVHEIVREAFLS    | LCSN |
| PtOFFP24  | AVKL | SK-DPQDFRDSMTEMIQNVG   | V  |    | HDW-DEMEELIYCYLALN |    | SPDHGIIITANAFLS   | LSCH |
| AcOFFP10  | AVKY | SM-DPLDLKRESMTEMIVKNGV | V  |    | RNW-EDLEELIYCYVVLN |    | SSDHGIIIEVAFLS    | LCCS |
| SmOFF2    | IVME | SM-DPYNDFRDSMTEMVRENG  | I  |    | FEW-PELCELLYCYLALN |    | SPDQHESTKLAFAAD   | LVAE |
| PtOFFP29  | GDED | VE-DACRSFENYIVEMVVEEGQ | V  |    | RDLM               |    | CPVFIDIVGRFYGE    | LCKD |
| PtOFFP28  | GDED | VE-DACRSFENYIVEMVVEEGK | V  |    | RDLM               |    | CPVFIDIVGRFYGE    | LCKD |
| VvOFFP9   | GHED | LE-DACRSFENYIVEMVVEEGK | V  |    | RDLM               |    | CPVFIDIVGRFYGE    | LCKD |
| CpOFFP11  | GNDE | VE-DACRSFENYIVEMVVEEGR | V  |    | RDLM               |    | CPVFIDIVSRFYGE    | LCKD |
| PpaOFFP16 | GHEE | VQ-DACRSFENYIVEMVVEEGK | V  |    | RDLM               |    | SPVFIDIVGRFYGE    | LCKD |
| MgOFFP23  | DDDD | VE-DACKSFEKYLTEMIGEDGK | M  |    | RDLM               |    | SPVFIDIVCRFYGE    | LCKD |
| AcOFFP11  | DQDE | VE-DACRSFENYIVEMVVEEGK | L  |    | RDLM               |    | CPVFIDIVCRFYGE    | LCKD |
| SIOFP26   | VLDN | AE-DACRSFENYIVEMVVEEGK | M  |    | RDLM               |    | SPVFIDIVSRFYGE    | LCKD |
| StOFFP26  | VLGD | VE-DACRSFENYIVEMVVEEGK | M  |    | RDLM               |    | SPVFIDIVSRFYGE    | LCKD |
| SIOFP25   | FQDD | VE-DACRSFENYIVEMVVEEGK | M  |    | RDLM               |    | CPVFIDIVCRFYGE    | LCKD |
| AtOFFP17  | EDNA | VE-DACRSFENYIVEMVVEEGK | I  |    | DDL-MDVEELLYCWKNLK |    | SPVFIDIVSRFYGE    | LCKD |
| AtOFFP20  | KEDG | VK-EACRSFENYIVEMVVEEGK | I  |    | DDL-MDVEELLYCWKNLK |    | SPIFIDIVTRFYGE    | LCTD |
| ZmOFFP45  | GHDD | VE-AACRSFERHMETIVEERE  | V  |    | VDL-TDVEELLCQWERLR |    | CPALVRIVGRFYGE    | LCMD |
| OsOFFP32  | GDDG | VE-EACRSFEKHIMEMIVEERK | V  |    | RDLM               |    | SPVFQIVGRFYGE     | LCMD |
| ZmOFFP44  | KEEE | EE-EACRSFESYIMEMIVEEGK | A  |    | RDLM               |    | SPVFIEIVWSFYGE    | LCND |
| OsOFFP33  | RGEE | EE-GPCRSFEERIMEMILEEGK | V  |    | RDQ-QDVEELLCQWERLR |    | SPVFIEIVCRFYGE    | LCKD |
| SmOFFP7   | VQRS | EA-MKLSRWDFVEMVVADSF   |    |    | DDL-VDLEELLYGYMLLN |    | CPVFRAMVQRFSE     | FCVE |
| PpOFFP10  | IINP | NS-DAVSAFQNFVAFMMLEGAD | V  |    | PELNMDVEQFIAGYMLLN |    | SPFYDLIEDFFKS     | VCMD |
| PpOFFP11  | VVIS | QK-EAVAAEQDDIAEMMLEEQD | S  |    | DEV-ADIEELLDGMYMLK |    | SPFYLEVVEEFFRA    | ISYD |