

Additional File 11

Alignment of vertebrate p47phox, vertebrate NOXO1, chordate SH3PXD2

proteins, and 47phox-like proteins. *Gray boxes* indicate the predicted domains

corresponding to the PX (residues 3-132) and bis-SH3 (residues 151-282) domains of

human p47phox. *Blue boxes* indicate the predicted C-terminal SH3 domains of human

SH3PXD2a and 2b. *Red letters* indicate the characteristic amino acid residues of human

p47phox PX domain (Arg-42, Pro-73, and Arg-90). Abbreviations: Hs (*H. sapiens*), Cf

(*C. familiaris*), Rn (*R. norvegicus*), Mm (*M. musculus*), Gg (*G. gallus*), Xt (*X.*

tropicalis), Dr (*D. rerio*), Tr (*T. rubripes*), Tn (*T. nigroviridis*), Ol (*O. latipes*), Ci (*C.*

intestinalis), Sp (*S. purpuratus*), Lg (*L. gigantea*), Nv (*N. vectensis*), Mb (*M.*

brevicollis).

	PX-domain	
Hs-p47phox	-----MGDTFIRHIALLGFEKRFVPSQHY-----	24
Mm-p47phox	-----MGDTFIRHIALLGFEKRFIPSQHY-----	24
Rn-p47phox	-----MGDTFIRHIALLGFEKRFVPSQHY-----	24
Cf-p47phox	-----MGDTFIRHIALLGFEKRFVPSQHY-----	24
Gg-p47phox	-----VGDTFIRHIELLRYEKRFPSQHY-----	24
Xt-p47phox	-----MTEPHIRHIQLLGFEKRFIPSQHY-----	24
Tn-p47phox	-----MADTYVRHVQLLGFEKRFPSQHY-----	24
Tr-p47phox	-----MAETYVRHVQLLGFEKRFPSQHY-----	24
Ol-p47phox	-----MEDVYVRHVELLGEKRFPTQHF-----	24
Dr-p47phox	-----MAETYVRHVELLGEKRFPSQHY-----	24
Mm-SH3PXD2a	-----MLAYCVQDATVVDVEKRRNSPKHY-----	24
Rn-SH3PXD2a	-----MLAYCVQDATVVDVEKRRNSPKHY-----	24
Hs-SH3PXD2a	-----MLAYCVQDATVVDVEKRRNSPKHY-----	24
Gg-SH3PXD2a	-----MSSNIYKFTITTEKYKVVYVDEKQSAMCCYYPKQSGWQLQARGFH	44
Xt-SH3PXD2a	-----MLSFVVLVSVQGVQKRRNSPKHY-----	24
Dr-SH3PXD2a	-----	

Tr-SH3PXD2a1	-----VLDVKVVDVEKRRSPSKHY-----	19
Tr-SH3PXD2a2	-----VLDVNVVDVQKRRNPSKHY-----	19
Hs-SH3PXD2b	-----MPPRRSIVEVKVLDVQKRRVPNKHY-----	25
Cf-SH3PXD2b	-----	
Mm-SH3PXD2b	-----MPPRRSIVEVKVLDVQKRRVPNKHY-----	25
Rn-SH3PXD2b	-----MPPRRSIVEVKVLDVQKRRVPNKHY-----	25
Gg-SH3PXD2b	-----MGPLE-----	5
Dr-SH3PXD2b	-----MPRRTVLEVTVQDVQKRRNPNKHY-----	24
Lg-p47phox-like	MFLIYLSIRDDTYITFSIQTYIKFLSVFDSTHITFYIRRLCYIFQ-----	45
Ci-SH3PXD2	-----MSQIPKRLITAVNVNRAEKRRVPSKHY-----	27
Ci-p47phox	-----MVNRTLKSVKVIDIEKRRLPSKHY-----	24
Sp-p47phox	-----MGKRTVVANVTDIEKRREPTKHY-----	24
Nv-p47phox-like	-----MTKRTIKDVKIVDVQKRKIPSKHY-----	24
Mb-p47phox-like	-----MAKFVKNVTVIDYQRRRAPSKHY-----	23
Hs-NOX01	-----MAGPRYPVSVQGAALVQIKRLQT-----	23
Cf-NOX01	-----MAGSRHPVSVRAAALVQTGRLQT-----	23
Mm-NOX01	-----MASPRHPVSAHAVALVQMDRLQT-----	23
Rn-NOX01	-----MASPRHPVSAHAVALVQMERLQT-----	23
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----LIKLFIRRVVHRNMDINIHSPPQ-----	24
Ol-NOX01	-----PADTHMSLSVSAAGSDKWLLPSDDRKY-----	27
Tn-NOX01	-----METQRYPISARLVGVLHKEKSKVGAHKSQVVLFHARFNQQLCPLQ-----	45
Hs-p47phox	-----VYMFLVKWQDLSEKVVYRRFTEIYEFHKTLKEMFPIEAGAINPENRIIP	73
Mm-p47phox	-----VYMFLVKWQDLSEKVVYRKFTIYEFHKMLKEMFPIEAGEIHTENRVIP	73
Rn-p47phox	-----VYMFLVKWQDLSEKVVYRKFTIYEFHKMLKEMFPIEAGEIHTENRVIP	73
Cf-p47phox	-----VYMFLVKWHDLSEKVVYRRFTEIYEFHKMLKEMFPIEAGDINPENRIIP	73
Gg-p47phox	-----VYMFLVKWDLSEKLIYRRFTDIYEFHKALKEMFPIESGDINAENRIIP	73
Xt-p47phox	-----VYFMVKWQDLTEKLVYRKFTIYEFHKSLEKEMFPIEAGDISKEHRTIP	73
Tn-p47phox	-----VYMLLVKWSLDEKLIYRYPEIYTFHKALKEMFPIEAGKIEKRDRIP	73
Tr-p47phox	-----VYMLLVKWSLDEKLIYRYPEIYTFHKALKEMFPIEAGKIEKRDRIP	73
Ol-p47phox	-----VYMLLVKWSQSEKLIYRYPEIHTFHKSLEKEMFPIEAGQIEAKDRIP	73
Dr-p47phox	-----VYMLLVKWSQSEKLIYRRYPEVHTLHKLKEMFPIEAGDIDEKDRIP	73
Mm-SH3PXD2a	-----VYIIRVTWSDSTSQTIIYRRYSKFFDLQMQLLDKFPIEGGQKDPKQRIIP	73
Rn-SH3PXD2a	-----VYIIRVTWSDSTSQTIIYRRYSKFFDLQMQLLDKFPIEGGQKDPKQRIIP	73
Hs-SH3PXD2a	-----VYIIRVTWSDSTSQTIIYRRYSKFFDLQMQLLDKFPIEGGQKDPKQRIIP	73
Gg-SH3PXD2a	WRSLYAWGFLKVVYIIRVTWSDLSQIIYRRYSKFFDLQMQLLDKFPIEGGQKDPKQRIIP	104
Xt-SH3PXD2a	-----VYIIRVTWSDSTSQVIYRRYSKFFDLQMQVLDKFPIEAGQKDPKQRIIP	73
Dr-SH3PXD2a	-----MAVYR-----GQATG-----	10
Tr-SH3PXD2a1	-----VYLINVTYSNTSHIVYRRYSKFFDLQMQILDKFPIEGGQKDPKQRIIP	68
Tr-SH3PXD2a2	-----VYLINVTYSNTSHIVYRRYSKFFDLQMQILDKFPIEGGQKDPKQRIIP	68
Hs-SH3PXD2b	-----VYIIRVTWSSGSTEAIYRRYSKFFDLQMQMLDKFPIEGGQKDPKQRIIP	74
Cf-SH3PXD2b	-----VYIIRVTWSSGSTEAIYRRYSKFFDLQMQMLDKFPIEGGQKDPKQRIIP	49
Mm-SH3PXD2b	-----VYIIRVTWSSGSTEAIYRRYSKFFDLQMQMLDKFPIEGGQKDPKQRIIP	74
Rn-SH3PXD2b	-----VYIIRVTWSSGSTEAIYRRYSKFFDLQMQMLDKFPIEGGQKDPKQRIIP	74
Gg-SH3PXD2b	-----VYIIRVTWSSGSTEVIYRRYSKFFDLQMQMLDKFPIEGGQKDPKQRIIP	54
Dr-SH3PXD2b	-----VYIIRVTWSSGSTEVIYRRYSKFFDLQMLDKFPIEGGQKDPKQRIIP	73
Lg-p47phox-like	-----VYVIFVTWSDSGTYVVYRRYSRFFDFQSALLDKFPIEGGSIDPESRIIP	94
Ci-SH3PXD2	-----VYVIEVSWDDGSDTVIFRRYSKFFDLQISLLETFPKEGGKDPSTRIP	76
Ci-p47phox	-----VYLIEIKWSDGSLCTVGRRFSAFFMMHMTLLEKFPLEGGKDPKQRIIP	73
Sp-p47phox	-----VYIIRVTWSDGVSNNVYRRYSTFFDFQNKLSKFPPEEAGANNPSSRCIP	73
Nv-p47phox-like	-----VYVISVTWSDGVSNNVYRRYSKFFDLQTKLLEEFPEGGVDPKQRIIP	73

Mb-p47phox-like -----VYVITVVVSDGSEVTIYRRYSQLFEFHTSLLDRFPEAAGATGEE-RIIP 71
Hs-NOX01 -----FAFSVRWSDGSDTFVRRSWDEFRLKKTLLKETFPVEAGLLRRSDRVLP 71
Cf-NOX01 -----FAFSVCWSDGSDTFVRRSWAEFKELHKTLLKEAFPVEAGLLRRSDRILP 71
Mm-NOX01 -----FAFSVCWSDNSDTFVRRSWDEFRLQKTLKKTFFPVEAGLLRRSEQVLP 71
Rn-NOX01 -----FAFSVCWSDNSDTFARRSWEEFRQLQKTLKKTFFPVEAGLLQRSERVLP 71
Gg-NOX01 -----YMMFVSWSDQNNILYRTLEEFKRFHKLKRRKFPIESGSLRRSDRTIP 48
Xt-NOX01 -----WSDHNEILYRTFEDFKLNRQLKKTFFLEAGLFRKSDNLLP 42
Dr-NOX01 -----LYMTTVLWSDGNEITVYRSLEDFKMKHRQLKKTFFPSN-PFKRSARIVP 72
O1-NOX01 -----TFMVSGIWSGDSEIIYRSFKDFKFKHDQLKKTFFPNLT-PFRKEDRMLP 75
Tn-NOX01 -----MYMTSVLWSDHNEIVVYRTFQDFRKMH-KLKRSKGKKS-PTR----- 85

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Hs-p47phox **HLPAPK-----WFDGQRAAE---NRQGTLETCYGLTMSLPTKISRCPHLLDFFKVRPDDL** 125
Mm-p47phox HLPAPR-----WFDGQRAAE---SRQGTLETCYFNGLMGLPVKISRCPHLLDFFKVRPDDL 125
Rn-p47phox HLPAPR-----WYDGGRAAE---SRQGTLETCYFNSLMGLPMKISRCPHLLNFFKVRPDDL 125
Cf-p47phox HLPAPR-----WFDGQRAAE---SRQGTLETCYNTLMGLPVKISRCPQLLDFFRVRPDDL 125
Gg-p47phox HLPAPK-----WFDGQRSTQ---SRQGTLETCYCYTLVNLPHKISRCRHVVSFFFEVVRPDDM 125
Xt-p47phox HLPAPK-----WFDGLRSTE---NRQVTLSDYFSSLLSLPPKISRCPHVNLFFKVRSDDV 125
Tn-p47phox SLSAPP-----WLDQKSTE---TRQVTLSDYCYALVNLPPHISRCTHLSLTKVVRPEDE 125
Tr-p47phox SLSAPP-----WLDQKSTE---TRQVTLSDYCHSLVNLPPHISRCTHLSLTKVVRPEDE 125
O1-p47phox KLPAPR-----WLESQKSRE---NRKTTLVVDYCHLLVSLPPHISRCNELSNFFKVRPEDE 125
Dr-p47phox TLPAPK-----WLDNQKTE---TRQATLAECYRSLNLPANISRCQLIRDFKMRPEDE 125
Mm-SH3PXD2a FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPEDV 128
Rn-SH3PXD2a FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPEDV 128
Hs-SH3PXD2a FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPEDV 128
Gg-SH3PXD2a FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPEDL 159
Xt-SH3PXD2a FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPDDL 128
Dr-SH3PXD2a -----RWQGRVG----- 17
Tr-SH3PXD2a1 FLPGKI-----LFRRSHIRDVAVKRLRFIDYCRALVRLPPQISQSEEVLRFFETKAEDI 123
Tr-SH3PXD2a2 FLPGKV-----LFRRSHIRDVAVRRLKHLNDYCKALMKLPSQISQSEEVLRFFETKLDL 123
Hs-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLIPIDEYCKALIQLPPYISQCDEVLRFFETRPEDL 129
Cf-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLIPIDEYCKALIQLPPYISQCDEVLRFFETRPEDL 104
Mm-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLIPIDEYCKALIQLPPYISQCDEVLRFFETRPEDL 129
Rn-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLIPIDEYCKALIQLPPYISQCDEVLRFFETRPEDL 129
Gg-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLIPIDEYCKALIQLPPYISQCDEVLRFFETRPDDL 109
Dr-SH3PXD2b FLPGKI-----LFRRSHIRDVAVKRLKPIDEYCRALVRLPPHISQCDEVFRFFEARPEDL 128
Lg-p47phox-like FLPGKI-----IFGRSHIRDVAVKRLGPIIDYCKAVIALPPKISQCDEVLRFFEVETDDL 149
Ci-SH3PXD2 FLPGKI-----LFRRSNIRDVAVKRVLSIGYCKDLIKLPSYIVQHSLLDFFETKPEDL 131
Ci-p47phox FLPGKI-----LFKRSHTRDVTLKRGLSISEYCESLLLLPEHISQCDELRRFFETSSSDI 128
Sp-p47phox FLPGKK-----LFGRSHIREVALKRLSPIDEYCTALVKLPGKISDSKEVINFFPTPEDV 128
Nv-p47phox-like FLPGKI-----LFGRSHIRDVAVKRPKEIQEYCSKLVLPKISQGLVLRFFEPKPEDI 128
Mb-p47phox-like FLPGKK-----IFGRSHTHKVAQSRAKPIDEYKLVLSLPAELSRCDLALFEATNTDI 126
Hs-NOX01 KLL-----DAPLLGRVGRTSRGLARLQLLETYSRRLATAERVARSPITGFFAPQPLDL 126
Cf-NOX01 KLP-----DTSLLVRGGRTGRGLARLRLDLYTRALLAAAEQLSRSVLTGFFEPQPVDL 126
Mm-NOX01 KLP-----DAPLLTRRGHTGRGLVRLRLDLYVQALLATSEHILRSSALHGGFFVPKPLDL 126
Rn-NOX01 KLPQACRNAPLLTRRGHTGRGLRLRLLLETYVRSLLATSQHIVTSSTLNSFFAPKPLDL 131
Gg-NOX01 RFKDING----KQKSGKINRSLERLKLLETYQELLKVDAKISQGEDVIQFFKAQTQDL 104
Xt-NOX01 KLKDV-----IFRKNRTNRFIERLRLLEKYSQELLRTDGKISQCDLVKFFTPSNNDL 97
Dr-NOX01 EFKGN-----KWSGSK-SVLRMKALEEYCGQLLKSDAQVCRSELIQFLPKAHD 122
O1-NOX01 KFNGKAR----RSLKQKSGSKSVKQMEFLESYCDKLLKCDPNVTSSEVTRFFTPKQD 131
Tn-NOX01 -----SLVRLKFLQKYNELLSCEPRVVSQSADLIQFFHPNAQDL 124

bis-SH3 domains

Hs-p47phox **KLPTD-NQTKKPETYLMPKD-GKS-----TATDITGPIILQTYRAIANYEKTSQSE--M** 175

Mm-p47phox KLPTD-SQAKKPETYLVPKD-GKN-----NVADITGPIILQTYRAIADYEKSSGTE--M 175
Rn-p47phox KLPND-SQVKKPETYLTAKD-GKN-----NVADITGPIILQTYRAIADYEKSGKTE--M 175
Cf-p47phox KLPTD-SQVKKPETYLVPKD-GKS-----SVTDITGPIILQTYRAIADFEKTSSSQ--M 175
Gg-p47phox NPVTD-SQIRKPEVFLPKD-AKK-----NTSDITGPIVLQTYRAIADYEKSSKSE--M 175
Xt-p47phox NPVANNTNGRKPETFLLKVDATAK-----NVSDITGPIILQSYRVIADYEKNSKSE--L 177
Tn-p47phox NPAAP-NLTKRNETFVVSRLARG-----NASEISGPIILDMYRAIADYTKTKYE--I 176
Tr-p47phox NPPSP-NILTKRNETFVVSRLARG-----NVSEISGPIILDMYRAIADYTKTKYE--I 176
O1-p47phox NPPAP-NITKRNETFVVSKEPAQG-----TAAEISGPIILDYRVIADFEKTSKHE--L 176
Dr-p47phox TPPAP-HPYKRNETFIMSTNRVRSN-----TTSEITGPIILETYRVIADYSKSSKYE--L 177
Mm-SH3PXD2a NPPKEDYGSSKRKSVWLSSWAESPCKDVT-GADTNAEPMILEQYVVVSNYKQKQENSE--L 185
Rn-SH3PXD2a NPPKEDYGSSKRKSVWLSSWAESPCKDVT-GADTNAEPMILEQYVVVSNYKQKQENSE--L 185
Hs-SH3PXD2a NPPKEDYGSSKRKSVWLSSWAESPCKDVT-GADTNAEPMILEQYVVVSNYKQKQENSE--L 185
Gg-SH3PXD2a NPPKEDYGSSKRKSVWMSLSETPKKSVPAGDASSEPMILEQYVVVSNYKQKQENSE--I 217
Xt-SH3PXD2a DPPKEDYGSSKRKSVWMSLSEIPKADPK-GADGNSEPIILDQYVVVSNYKQKQENSE--I 185
Dr-SH3PXD2a -----RGS-AGRWTACFFPSA-----GLDSS-EPMVLEQYVVVANYERQENSE--I 61
Tr-SH3PXD2a1 NPPVDRSRGSTAGRWTACFFSPP-----GIESS-EPMVLEQYVVVANYERQENSE--I 173
Tr-SH3PXD2a2 NPPTDRSRGPMAGSWLTACFFPTGP-----GLDAS-DPMLLEQYVVVASYEKQEPAE--I 175
Hs-SH3PXD2b NPPKEEHIGKKKSGGDQT-----SVDPMVLEQYVVVANYQKQESSE--I 171
Cf-SH3PXD2b NPPKEEHVGGKKSGGDLT-----SVDPMVLEQYVVVADYQKQESSE--I 146
Mm-SH3PXD2b NPPKEEHIGKKKSGNDPT-----SVDPMVLEQYVVVADYQKQESSE--I 171
Rn-SH3PXD2b NPPKEEHIGKKKSGSDPT-----SVDPMVLEQYVVVANYQKQESSE--I 171
Gg-SH3PXD2b TPPKEEPIGKKKSGADSA-----SVDPLVLEQYVVVANYQKQESSE--I 151
Dr-SH3PXD2b NPPKEEPSGKKKSGGDSS-----SADPLLLDQYVAVTDYEQKQESSE--I 170
Lg-p47phox-like DPPKAEKKKKDEGAKKAEN-----ISDPKTLTQYRVTCDYEQKQDRGE--I 193
Ci-SH3PXD2 K-PPSESTSRASKRNSLD-----ISQPILPESYVVVQDYIKTQPKQ--L 173
Ci-p47phox ARDTKEKTQSTAVSQIIQD-----ITGPIELETYIAIADYKAEAKTQ--I 171
Sp-p47phox SPPSPDGGGSTRGRADIGN-----ISEPIQAEQYIVVADYKQKQKNE--V 172
Nv-p47phox-like ELPLEK--KTKKKTADV-----ISDPVSLQYVAIADYKQKQNRNE--I 168
Mb-p47phox-like APPSEQERERRPTGIFKLSKSDSGKEE-REISVGDVMVLDQYRAVADYTKQDRKE--L 183
Hs-NOX01 EPALPPGSRVILPTPEEQPLSRA-----AGRLSIHSLEAQLRCLQPFCTQDTRDRPF 179
Cf-NOX01 EPVLPPLGSLVILPTPEE-PHRRP-----PHSPAICSLAQLRCLQPFSTQDQGWPF 178
Mm-NOX01 EPMLPPGSLVILPTPEE-PLSQP-----RGLSDIHSLEAQSIPCVQPFHTLDIRDRPF 178
Rn-NOX01 EPMLPPGSLVILPTPEE-PLSQP-----IGSLAIHSLEAQSMLRCLQPFHTLDTKDRPF 183
Gg-NOX01 DPCFPEDSVVIMPSEIGGEKKEVQ---QQQLSITYPQVVSQSYRCIETFETKDTKNKTF 160
Xt-NOX01 NPKFPENSLVMMTSDSKDQKQKQP---LPEAPAIHPIVSQYICMEDYETKDTKNRPF 153
Dr-NOX01 NADFAKNCIVIMPSDVTLGSSKA-----ESNSGVTQPFVTETYRCIANYETKDTKNRPF 176
O1-NOX01 QPDFTKNSSLLLVIYGR-PGALRS-----SGAGNVTHPFVTQTYRCVAPYETRDTKNRPF 184
Tn-NOX01 EPEFSKNRQEEVKAEGHGSVG-----NVTQPFVTVTYRCVVSQYETKDTKNKPF 173

Hs-p47phox ALSTGDVVEVVEKSESSEGWFFCQMKK-KRGWIPASFLPLDSDPEDETEPEPNYAG----- 228
Mm-p47phox TVATGDVVDVVEKSESSEGWFFCQMKT-KRGWVPASYLEPLDSDPEAEDPDPNYAG----- 228
Rn-p47phox TVATGDVVDVVEKSESSEGWFFCQMKT-KRGWVPASYLEPLDSDPEAEDPDPNYAG----- 228
Cf-p47phox ALATGDVVDVVEKSESSEGWFFCQTKT-KRGWVPASYLEPLDSDPEAEDPEPNYEG----- 228
Gg-p47phox AVKAGDAVDVVEKSETGWWFCQLKT-KRGWVPAAYLEPMDGPESEEQEPNYAG----- 228
Xt-p47phox AAKNGDVEIVEKSENGWWFCQLRN-KRGWMPAAYLEPLDGPDESEEQDPNYEG----- 230
Tn-p47phox NLLAGDQVEIVEKNQNGWWFCQMDK-KRGWVPASYLEPLDGPDESEEEADPDYEGS----- 230
Tr-p47phox NLHAGDQVEIVEKNQNGWWFCQCDK-KRGWVPASYLEPLDGPDESEEEAEPDYGGSP----- 231
O1-p47phox NLHDGDLVEILEKNSNGWWFCQCEA-KRGWVPASYLEPLDGPDESEEEAEPDYEG----- 229
Dr-p47phox TLKMGDMVDIVEKSPNGWWFCQCES-RRGWVPASYLEPLDGADESEEEPEPNYAG----- 230
Mm-SH3PXD2a SLQAGEVVDVIEKNESGWVVFSTSE-EQGWPATYLEAQNGTRDSDINTSKTGEVSKRR 244
Rn-SH3PXD2a SLQAGEVVDVIEKNESGWVVFSTSE-EQGWPATYLEAQNGTRDSDINTSKTGEVSKRR 244
Hs-SH3PXD2a SLQAGEVVDVIEKNESGWVVFSTSE-EQGWPATYLEAQNGTRDSDINTSKTGE----- 239
Gg-SH3PXD2a SLQAGEVVDVIEKNESGWVVFSTAE-EQGWPATYLESQNGTRDSDINTSKTGE----- 271

Xt-SH3PXD2a	SLKTGELVDVIEKNESGWWFVSTTE-EQGWPATYLDSSQGGTKDDSEINTSKSGDVTKRR	244
Dr-SH3PXD2a	SLKAGETVDVIEKSESGWWFVSTAE-EQGWPATYLDSSQSGTRDDLDLGTSRSGEVTKRR	120
Tr-SH3PXD2a1	NLKAGETVDVIEKSESGWWFVSTAE-EQGWPATYLDSSQATRDDLDLGTFRGTGEVTKRR	232
Tr-SH3PXD2a2	SLQAGEVVDVIEKSESGWWFVSTAE-EQGWPATYLNHSGTRDDLDLQASKAGEVTKRH	234
Hs-SH3PXD2b	SLSVGQVVDVIEKNESGWWFVSTAE-EQGWPATCLEGQDGVQDEFSLQPE-----	221
Cf-SH3PXD2b	SLSVGQVVDVIEKNESGWWFVSTAE-EQGWPATCLEGQDGMQDEFSLQPE-----	196
Mm-SH3PXD2b	SLSVGQVVDVIEKNESGWWFVSTAE-EQGWPATCLEGQDGVQDEFSLQPE-----	221
Rn-SH3PXD2b	SLSVGQVVDVIEKNESGWWFVSTAE-EQGWPATCLEGQDGVQDEFSLQPE-----	221
Gg-SH3PXD2b	SLCVGQLVDVIEKNESGWWFVSTSE-EQGWPATCLEAQDGVQDELSMQPD-----	201
Dr-SH3PXD2b	SLYVGQVVEVIEKNESGWWFVSTED-AQGWPATCLEAQD-DPDDFSLPAE-----	219
Lg-p47phox-like	DLEAGMIVEVAEKSETGWWFVNSDD-AQGWPSTYLEPADGSTTDNVVLRAPG-----	246
Ci-SH3PXD2	NARVGEVVEVMDKHENGWWFVSTEDGEGQWVPGVYLKPKDGKSENLVIKQDQLG-----	227
Ci-p47phox	SLHSGETVEVVEKSESGWWLVCNTYGSNGWVPGAYLEKEDGSEEDLVTEKAAVG-----	225
Sp-p47phox	ELTAGDLVEVFEKNDNGWVFTVHD-QHGWAPGTFLQNPDGQEEDEEETLIPG-----	224
Nv-p47phox-like	TMVAGDIVEVIDKNENGWWFVNLE-EQGWPAAAYLESVDGHSDDAAPIEGPT-----	220
Mb-p47phox-like	SFKTGDIFEVVEKNDNGWVFSNDS-----	208
Hs-NOX01	QAQAQESLDVLLRHPSGWWLVENEDRQTAWFPAPYLEE---AAPGQREGGPSLGS----	232
Cf-NOX01	HARAQEVIDVLLRHPSGWWLVANEEQQMAWFPAPYLEE---AAP--DREG-TTLRS----	228
Mm-NOX01	HTKAQEILDILLRHPSGWWLVENKQQVAVFPAPYLEE---VATCQQGESGLALQG----	231
Rn-NOX01	HTQAQEILDILLRHPSGWWLVENKQQTAWFPAPYLEE---IATGQQGESGMVAVQG----	236
Gg-NOX01	KVAKKEIVEVLLKDMTGWWLVENADKQIAWFPASYLEQ---ISAHKDIQNVESSE-----	213
Xt-NOX01	KVKRHELVGVLIKENTGWWLVENEKHLAWFPAPYLKD---VDNSEDTSQ-TSED-----	205
Dr-NOX01	KVEVDETVDVLKDKQKWWLVENESKHLAWFPAPYLERAEMADDPDEMDFNESFQS----	232
Ol-NOX01	KVAVDEKLDVLIKDPAGWWLVESENKRLAWFPAPYLE---VLDGEDEDEGNLQ-----	235
Tn-NOX01	KVAADKVDVLIKDKAGWWLVENEKRMWFPAPYLEK---LEEDGDEDDTDGTR-----	225

Hs-p47phox	-----EPYVAIKAYTAVEGDEVSLLEGEAVEVIHKLLDGWW	264
Mm-p47phox	-----EPYVTIKAYA AVEEDEMSEGEAIEVIHKLLDGWW	264
Rn-p47phox	-----EPYVTIKAYA AVEEDEVSLSEGEAIEVIHKLLDGWW	264
Cf-p47phox	-----EPYVTIKAYTAEMEDEMSEGEAIEVIHKLLDGWW	264
Gg-p47phox	-----ELYVVQKSYTAVEEDELTLKEGDTIEVIHKLLDGWW	264
Xt-p47phox	-----DLHITTKDYSGELDDDELQEGENVEVIHKLLDGWW	266
Tn-p47phox	-----ELFITIKAYKAEQEDEISLDLGESEIEVIHKLLDGWW	266
Tr-p47phox	-----CELYITIKAYKAEQEDEITLDLGESEIEVIHKLLDGWW	268
Ol-p47phox	-----ELHVTTNAYKAEQDDEISLDLGETVEVIHKLLDGWW	265
Dr-p47phox	-----ELYKTTRGYKAVEQDEMTLEAGVIEVIHKLLDGWW	266
Mm-SH3PXD2a	KAHLRRLDRRWTLGGMVNRQHSREEKYVTVQPYTSQSKDEIGFEKGVTVEVIRKNLEGWW	304
Rn-SH3PXD2a	KAHLRRLDRRWTLGGMVNRQHSREEKYVTVQPYTSQSKDEIGFEKGVTVEVIRKNLEGWW	304
Hs-SH3PXD2a	-----EEKYVTVQPYTSQSKDEIGFEKGVTVEVIRKNLEGWW	276
Gg-SH3PXD2a	-----EEKYVTIQPYASQKDEIGFEKGVTVEVIQKNLEGWW	308
Xt-SH3PXD2a	KAHLRRLDRRWTLGGIVNRQHSREEKYITVQPYTSQKDEIGFEKGDTVEVIQKNLEGWW	304
Dr-SH3PXD2a	KAHLKRLDRRWTLGGIVNRQHSREEKYVSVQAYASQKDEIGFEKGVTVEVIQKNLEGWW	180
Tr-SH3PXD2a1	KAHLKRLDRRWTLGGIVNRQHSREEKYVTLQPYTSQKDEVTFEKGVIVEVIQKNLEGWW	292
Tr-SH3PXD2a2	KAHLKRLDRRWTLGGVISRQHSREEKYVTVQSYTSEGKDEIAFEKGAVVEVIQKNLEGWW	294
Hs-SH3PXD2b	-----EEEKYTVIYPYARDQDEMNLERGAVVEVIQKNLEGWW	259
Cf-SH3PXD2b	-----EEEKYTVIYPYARDQDEMNLERGAVVEVIQKNLEGWW	234
Mm-SH3PXD2b	-----EEEKYTVIYPYARDQDEMNLERGAVVEVQKNLEGWW	259
Rn-SH3PXD2b	-----EEEKYTVIYPYARDQDEMNLERGVVVEVIQKNLEGWW	259
Gg-SH3PXD2b	-----EEEKYTVIYPYARDQDEMNLKGVVVVVIQKNLEGWW	239
Dr-SH3PXD2b	-----EEEKYTAIYPYARDQDEIDLERGMTVEVIQKNLEGWW	257
Lg-p47phox-like	-----QEEKFICIEMFQSNNGNDEISLEKGVAVEVLEKNLSGWW	284
Ci-SH3PXD2	-----QGELYLTQYNGE-DSEVSFNTGVLVEVLQKNLEGWW	264
Ci-p47phox	-----QGTWYVATSHYDATSNDEISFPMGAALVQLQKNLEGWW	263

Sp-p47phox -----NDE-SYITNNAYQGQAEDEISFETGVVVTVIQKSLDGWW 262
 Nv-p47phox-like -----VEVQYITTTSHKAELDDEITFETGVIVSVIQKDFDGGW 259
 Mb-p47phox-like -----ASQDEKYITTAAYAASSDDEIGYEKGVVVRVLEKLDGWW 248
 Hs-NOX01 -----SGPQFCASRAYESSRADELSVPAGARVRVLETSDRGWW 270
 Cf-NOX01 -----SGSQFCASQAYESSHADELSVPAGARVSVLETSDRGWW 266
 Mm-NOX01 -----SGRQFCTTQAYEGSRDELSPSGARVHVLETSDRGWW 269
 Rn-NOX01 -----SGRQFCATQAYEGSRPDELSPSGARVHVLETSDRGWW 274
 Gg-NOX01 -----EGSLYFVMRAYEAQKADELNLKGVVVEVRRSDNGWW 251
 Xt-NOX01 -----EGVLYAAKAYEAMNSDEVSIIVGLVVEVIEKSNNGWW 243
 Dr-NOX01 -----AGVFYVATKAYKATNSDELVELGSVLEVLQKSDNGWW 270
 Ol-NOX01 -----GSLYCAVRSYSTKKNDEVPLSIGSVVEVLRKSDDGWW 272
 Tn-NOX01 -----TLYLTAKNYKASKGDEISVAVGAVVEVLQKSDSGWW 261

* * * **

Hs-p47phox **VIRKDDVTGYFPPMYLQKSGQ**--DVSQAQRQIK-RGAPRRSSIRNVHSIHQSRKRKLSQ 321 -36
 Mm-p47phox VVRKGDITGYFPPMYLQKAGE--EITQAQRQIRGRGAPRRSTIRNAQSIHQSRKRKLSQ 322 -37
 Rn-p47phox VVRKGDITGYFPPMYLQKAGE--EITQAQRQIRSRGAPRRSTIRNAQSIHQSRKRKLSQ 322 -37
 Cf-p47phox VVRKDDITGYFPPMYLQKSGQ--DAAQAHRQIKSRGAPRRSSIRNAHSIHQSRKRKLSQ 322 -37
 Gg-p47phox VIRKDETTGYFPPMYLQKSGE--VNSPEKSGLRNHNIPRRSTIRNAKSIHNKGRKQISQ 322 -37
 Xt-p47phox VVRKGSITGYFPAMYLQKSGE--TAPANENPSKRKGLPPRRSTISNANSIHKKERKQISQ 324 -37
 Tn-p47phox VVRKGEETGYFPPMYLQKASKRAQEAARNHLQGGKPPRRSTIRNAKSIHNKSRQRLSQ 326 -39
 Tr-p47phox VVRKGEQMGYFPPMYLQKANKREQSESSRANVQGHKPPRRSTIRNAKSIHNKSRQRLSQ 328 -39
 Ol-p47phox VVRKDETGHFPPMYLTKASKRIQT--LRTNLHGQRPPRRSTIKNAKSIHNRSRQRLSQ 323 -37
 Dr-p47phox VVRKGEETGYFPPMYLQKASKRAQEAARNHLQGGKPPRRSTIRNAQSIHSTVRRRISQ 326 -39
 Mm-SH3PXD2a YIRYLGKEGWAPASYLKKAKDDLPT--RKKNLGAPVEIIGNIMEISNLLNKKASGDKEAP 362 -37
 Rn-SH3PXD2a YIRYLGKEGWAPASYLKKAKDDLPT--RKKNLGAPVEIIGSIMEISNLLNKKASGDKEAP 362 -37
 Hs-SH3PXD2a YIRYLGKEGWAPASYLKKAKDDLPT--RKKNLGAPVEIIGNIMEISNLLNKKASGDKETP 334 -
 Gg-SH3PXD2a YIRYLGKEGWAPASYLKKAKDDLPS--RKKNLGAPVEIIGNIMEISNLLNKKST-DKETQ 365
 Xt-SH3PXD2a FIKYQGKEGWAPASYLKKAKDDIPC--RKKNLGAPVEIIGNIMEISNLLNKKTPNDKESQ 362
 Dr-SH3PXD2a YIRYQGKEGWAPASYLKKLKKDDLSP--RKKTLGAPVEIIGNIMEISNLLNKKAVSEKDIQ 238
 Tr-SH3PXD2a1 FIRYLGKEGWAPASYLKKVKKDDFSP--RKKMTGAPVEIIGNIMEISNLLQKKSSEKDIQ 350
 Tr-SH3PXD2a2 FIRYQDKEGWAPASYLKKMKDDLSP--RKKAVTGPVEIIGNIMEISNLLNKKALSEKDVQ 352
 Hs-SH3PXD2b KIRYQGKEGWAPASYLKKNSGPELP--PKPGPGSPSHGALDLDGVSRRQNAVGREKELL 317
 Cf-SH3PXD2b KIRYQGKEGWAPASYLKKNSGPELP--PKPGTGSAPHTGILDLDGLSRQSSVGRDRELL 292
 Mm-SH3PXD2b KIRYQGKEGWAPASYLKKNSGPELP--PKLGPSSPAHSGALDLDGVSRRQNAVGREKELL 317
 Rn-SH3PXD2b KIRYQGKEGWAPASYLKKNSGPELP--PKLGPSS-AHSGALDLDGVSRRQNAVGREKELL 316
 Gg-SH3PXD2b KIRYQGQEGWAPASYLKKNGEMFS--QKLGSSSAHSCALDLDGISRQAVTSREK--- 294
 Dr-SH3PXD2b KIRYQGKEGWAPASYLKK--ADILS--QKMAAGAPVHASTNDLDVACKQQNANKENK--- 311
 Lg-p47phox-like LVRHQGKEGFAPATYLNKTEDQFAVS-LAKRKSLDVEIITNLSDISNIMKGDSPRNSLAS 343
 Ci-SH3PXD2 FVSYNGKQGWAPASYLTKPPESVTAISLSKLLSSPVKNDSSIPSSHSTLSLSSQSSSNAG 324
 Ci-p47phox LARYNSNEGWPVGSYLEK-----SRRTYS-WATDTAPTESVPGAESVKKSTLA- 311
 Sp-p47phox KVSYQGKQGWAPATFLQIYKGPSGV--TPKHPTQSIGNVMLLKS GSDSKPKPGPGGSSG 320
 Nv-p47phox-like LIRYQDKEGWAPAMYLRKPD-PS----QLHAAQAVG-----GLPSKDRVG-AVTAPA 305
 Mb-p47phox-like QVEYQGKVGWTPGTFLKRIENSAGPTTLKSTPASSTAATNGGVPPAKPPAPQLRNEKE 308
 Hs-NOX01 LCRYGDRAGLLPAVLLRPE----- 289
 Cf-NOX01 LCRFRGRSGLLPVLLQPE----- 285
 Mm-NOX01 LCRYNGRTGLLPAMSLQPE----- 288
 Rn-NOX01 LCRYNGQTGLLPVLLQPE----- 293
 Gg-NOX01 LIRYNGRKGYPMSMCLQAYKNPHRLQT-----IMNSGLHISTPNLCSPSPALQP--L 302
 Xt-NOX01 LIR----- 246
 Dr-NOX01 IVRYNRKAGYVPSMYLQPHNPRILLKS-----TQKEISRSTLDAQLQHPQT---- 318
 Ol-NOX01 LIRFNGKVGYPAMYLPYNNPRTGLHG-----QHNKIHTSTLNLSTMKDDQVPPSI 324
 Tn-NOX01 LIRYQGVGYVPTLCLQPYNRPQVRLNGAAPPGLQQSNKLSSSRGNLLQLPSAGRSPSP 321

Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	---AEGEGSEAPITKKEISLPILCNASNG-----	SALAIPERTTS 399
Rn-SH3PXD2a	---VEGEGSEAPISKKEISLPILCNASNG-----	SASGIPERTTS 399
Hs-SH3PXD2a	P--AEGEGHEAPIAKKEISLPILCNASNG-----	SAVGVPDRTVS 372
Gg-SH3PXD2a	---AENEASETHITKKEISLPILCNDSNG-----	NAMMTPDKQAS 402
Xt-SH3PXD2a	---GGNDSEEQTITKKEISLPILCNDSNG-----	NSMMSPEKQIP 399
Dr-SH3PXD2a	TDGEA-TTPERHISKSEISLPMPYAPEAGVAP--TVVTALGMNS----	GSSATLQENKS 290
Tr-SH3PXD2a1	TDGEGSTTPERHTSKNEISVTPFSSEINAETGRRLSTTRDTNSPCLGIAASAALSENKA	410
Tr-SH3PXD2a2	TEGVP-ESPQ--AARKEISLPIPCAESS-----	PASNPQEEKS 387
Hs-SH3PXD2b	-----	SSQRDGRFEG 327
Cf-SH3PXD2b	-----	NNQRDGRFEG 302
Mm-SH3PXD2b	-----	NNQRDGRFEG 327
Rn-SH3PXD2b	-----	NNQRDGRFEG 326
Gg-SH3PXD2b	-----	DGRFDN 300
Dr-SH3PXD2b	-----	NQRD 315
Lg-p47phox-like	-----	TETPKP 349
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	RPQP 324
Nv-p47phox-like	-----	AVRP 309
Mb-p47phox-like	-----	PPPRRESI 316
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	R-----	303
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	P-----	325
Tn-NOX01	Q-----	322
Mm-p47phox	-----DTYRRNSVRFLQQR-----	RPGRPGPQSTDG-TKDN-- 353
Rn-p47phox	-----DTYRRNSVRFLQQR-----	RPARPGPQSPD--SKDN-- 352
Cf-p47phox	-----DTYRRNSV-----	PTQPG----- 335
Hs-p47phox	-----DAYRRNSVRFLQQR-----	RQARPGPQSPGSPLEEE-- 353
Gg-p47phox	-----ETYRRNSKKYMQNRR-----	NMRGNLQNKDIISEKNE-- 354
Xt-p47phox	-----DTYRRNSKKYLKQR-----	QSIVDTKSPIITEENK-- 354
Tn-p47phox	-----DAYRRNSRRYLQKGGQRDLQNKYARTAAKSPLQERKNQGN	367
Tr-p47phox	-----DTYRRNSRRYLQKGGQLVKPDYPYPRNVAKSPLRERRNQGN	369
Ol-p47phox	-----EAYRRNSRRYLQKGGRLASPHRSSRSGKSPLTERKNHDN	364
Dr-p47phox	-----DSYRKQSRFLQQRG-----	RLNSHSRIGTRSPLQERRTNKN 363
Mm-SH3PXD2a	KLAQGSPAVARIAPQRAQISSPNLRTRPPPRESSL--GFQLPKPEPPSVEVEYYTIAE	457
Rn-SH3PXD2a	KLAQGSPAVARIAPQRAQISSPNLRTRPPPRESSL--GFQLPKPEPPSVEVEYYTIAE	457

Hs-SH3PXD2a	RLAQGSPAVARIAPQRAQISSPNLRTRPPRESSL--GFQLPKPPEPPSVEVEEYTTIAE	430	(3 rd SH3)
Gg-SH3PXD2a	KLAQGSPAIAIARIAPQRAQISSPNLRTRPPRESSL--GFQLPKPPEPPSVEVEEYTTIAE	460	
Xt-SH3PXD2a	KVTPGSPAIVARIAPQRSEISSPNLRTRKPPRESSL--GFQLPKPPEPPSVEVEEYTTIAE	457	
Dr-SH3PXD2a	RAEPGSPAIAIARVAPHRVEIGSPNLRQKPPRRDANL--AFQLPKPPEAPTVEAEYTTIAE	348	
Tr-SH3PXD2a1	RGDPGSPAIVARVAPHRVEIGSPNLRQKPPRRDNL--GFHLPKPPEPPAVEAEYTTIAD	468	
Tr-SH3PXD2a2	KVEPASPAVARIAPHRVEIGSPVLRQKPPRRDNL--GFQLPSPPEPTVEAEYTTIAE	445	
Hs-SH3PXD2b	RPVPDG-----DAKQRSKMRQRPPRRDMTIPRGLNLPKPPIPPQVEEYTTIAE	378	(3 rd SH3)
Cf-SH3PXD2b	RPVPDG-----DIKQRSKMRQRPPRRDMTIPRGLHLPKPPVPPQVEEYTTIAE	353	
Mm-SH3PXD2b	RLVPDG-----DVKQRSKMRQRPPRRDMTIPRGLNLPKPPIPPQVEEYTTIAE	378	
Rn-SH3PXD2b	RLAPDG-----DVKQRSKMRQRPPRRDMTIPRGLNLPKPPIPPQVEEYTTIAE	377	
Gg-SH3PXD2b	RPLPNA-----DIRRKSQKMRQRPPRRDLTIPRGLNLPKPPVPPQVEEYTTIAD	351	
Dr-SH3PXD2b	RFSPFS-----DSKRKVG-ARQRPDRDLTIPRGNLPKPPVPPQVEEYTTIAD	365	
Lg-p47phox-like	VTEMSY-----KVKSRLERGGNIKPPRQSMRM---VLSFTPSPHKTSHYVTIAE	399	
Ci-SH3PXD2	-----DTSSPSHKRLSGVGIKRPSLKPQVPPPPPHQSDDDVQYIAMHS	367	
Ci-p47phox	-----LVKPPPKRAT---IRRTLKVTGQDSIKEKHEDNLYITLFD	350	
Sp-p47phox	PVQPRDEPGQLYSNYDAEVKPTPPRRATVKKSVRRG---GVRQTKPKLKK-VMEHYTTDS	380	
Nv-p47phox-like	GVNPVTRDCKKTINFKAETETVTRKRKAHSVNVYG---KGEAMPALKSPDAEYFTVGE	366	
Mb-p47phox-like	RRPVSIIHSGPFAEIERARQIAAQNSTGKPAKPAVPALPKRNAASTNSGNDAVTIYCTR	376	
Hs-NOX01	-----GLGALLSGTGFR---GGDDPAGEARGF-----	313	
Cf-NOX01	-----GLGALLSGPLHREANSKEDRGGEAQR-----	313	
Mm-NOX01	-----GLGSLLGRPGFP-----DSAGADK-----	307	
Rn-NOX01	-----GLGSLLGRGPL-----DSGGADK-----	312	
Gg-NOX01	-----DSTARDCTSGDGSDELESDSSLSGSGAPSGLVSWKPD-----	342	
Xt-NOX01	-----		
Dr-NOX01	-----LQDS-----RLRELSRSQGNLLQPAETD---IMDKQ-----	347	
Ol-NOX01	-----RRDSPSSDSTSLREEAQGDAPRLQEDSQSSGEAASDR-----	364	
Tn-NOX01	-----QPHADGRQRSHSLNALLETLPAQPARGAAPDTGTPPSPQAPPVIR	369	
Mm-p47phox	-----PSTPRVKQPAVPPRPSSDLILHRCSTESTKRKL	386	
Rn-p47phox	-----PSTPRAKQPAVPPRPSSDLILHRCSTESTKRKL	385	
Cf-p47phox	-----KPQPAVPPRPSSDLILHRCSESTKRKL	362	
Hs-p47phox	-----RQTQRSKQPAVPPRPSSDLILNRCSESTKRKL	386	
Gg-p47phox	-----QEENKSKAQPAVPPRPSSDLIMNRCSTESTRRI	387	
Xt-p47phox	-----EEESKSKQPAIPPRPSKELILDRCSENTKSKI	387	
Tn-p47phox	I-----PEESGTASEGEPKKEAPVPPRPSPPELILQRCSDNTRKKI	408	
Tr-p47phox	I-----PEESSTISENEGKREAPVPPRPSPPELILQRCSDNTRKKI	410	
Ol-p47phox	I-----PELHG---SETETKRETPVPPRPSPPELILERCANTCKKV	403	
Dr-p47phox	I-----EKSSAPQAEDEK-SVPVPPRPSPQLILERCSTENTSKRM	403	
Mm-SH3PXD2a	F-----QSCISDG-ISFRGGQKAEVIDKNSGGWWWVQIGEGEWAP	497	
Rn-SH3PXD2a	F-----QSCISDG-ISFRGGQKAEVIDKNSGGWWWVQIGEGEWAP	497	
Hs-SH3PXD2a	F-----QSCISDG-ISFRGGQKAEVIDKNSGGWWWVQIGEGEWAP	470	
Gg-SH3PXD2a	F-----QSCISDG-ISFRGGQKAEVIEKNSGGWWWVQIGEGEWAP	500	
Xt-SH3PXD2a	F-----QSCISDG-ISFRGGQKAEVIEKNSGGWWWVQIGEGEWAP	497	
Dr-SH3PXD2a	F-----QSSISDG-ISFRGGQKADVIEKNSGGWWWVQIGDTEGWAP	388	
Tr-SH3PXD2a1	F-----QSSISDG-ISFRGGQKADVIEKNPGWWWVQIGEGEWAP	508	
Tr-SH3PXD2a2	F-----QSCISDG-ITFSGGQKAEVIEKNSGGWWWVQIGEGEWAP	485	
Hs-SH3PXD2b	F-----QTTIPDG-ISFQAGLKVEVIEKNLSGWWYIQIEDKEGWAP	418	
Cf-SH3PXD2b	F-----QTTIPDG-ISFQAGLKVEVIEKNLSGWWYIQIEDKEGWAP	393	
Mm-SH3PXD2b	F-----QTTIPDG-ISFQAGLKVEVIEKSLSGWWYIQMEDKEGWAP	418	
Rn-SH3PXD2b	F-----QTTIPDG-ISFQAGLKVEVIEKSLSGWWYIQMEDKEGWAP	417	
Gg-SH3PXD2b	F-----QTTIPDG-ISFQAGMKVEVIEKNLSGWWYIQIEEKEGWAP	391	
Dr-SH3PXD2b	F-----QTTIPDG-ISFQAGLKVEVIEKNSGWWYIQIEDKEGWAP	405	
Lg-p47phox-like	F-----EDTVGDG-LSFKEGQSVEIVEESDGGWWWVVKLNGKSGWVP	439	

Ci-SH3PXD2	F-----DGKIPHG-VAFNIDDPVTVLSKSP-GWVYVEVNGNEGWP	406
Ci-p47phox	F-----DSSIEDG-LSFKAGQIVKVI EQSDNGWWLATLNGAEGWVP	390
Sp-p47phox	F-----QGAAGEGSI SFESGQKVEVLEENDGGWVYVKMNGQEGWAP	421
Nv-p47phox-like	F-----RALGIQSGLD FSKGASVEVLDKNPNGWVYVKIDGNEGWI P	407
Mb-p47phox-like	K-----CDKQDDSGIALPAGARVELLEKSETGWYVYVYKAGREGWAP	417
Hs-NOX01	-----PEPSQATAPPP----TVPTRPSGAIQSRCCVTRRAL	347
Cf-NOX01	-----PEACQATTLS P----SVPARPLSAIRSRC SVTRRAL	347
Mm-NOX01	-----VAEDRTIPP----VVPTRPCMSAIQSRCCSITRRAL	339
Rn-NOX01	-----VTEGRTVPP----VVPTRPCMSAIQSRCCSITRRAV	344
Gg-NOX01	-----LSRSLPEVEQAVP-----MRPSAHEILQRCSTVTKRAV	375
Xt-NOX01	-----	
Dr-NOX01	-----KSDPCLNKMPSTP----KVPPRPAVQEILTRCTTVTRKNM	383
O1-NOX01	-----STNSSGFDESTGP----RVPPRPKAEELTRCTTMTRKAA	400
Tn-NOX01	PQYPRGQND AQLRSQHLQGSRN PQGSTQTPGPGDPHQVHHHPQECQRRSVAHPTRDT	429

Mm-p47phox	TSAV-----	390
Rn-p47phox	TSAV-----	389
Cf-p47phox	ASSV-----	366
Hs-p47phox	ASAV-----	390
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	S-----	409
Tr-p47phox	SIHKSSASTSKPGQA-----	426
O1-p47phox	SIHRSQSGSSSQNDQ-----	419
Dr-p47phox	SMQEA-----	408
Mm-SH3PXD2a	ASYIDKRKKPNLSRRTSTLTRPKVPPAPPSPKPEAEENPVGAC----ESQGS---PLKV	550
Rn-SH3PXD2a	ASYIDKRKKPNLSRRTSTLTRPKVPPAPPSPKPEAEENPVGAC----ENQGS---PLKL	550
Hs-SH3PXD2a	ASYIDKRKKPNLSRRTSTLTRPKVPPAPPSPKPEAEEGPTGAS----ESQDS---PRKL	523
Gg-SH3PXD2a	ASYIDKRKKPNLSRRTSTLTRPKVPPAPPSPKPKDSEEGTGMVSS---GDTQDS---PHKL	556
Xt-SH3PXD2a	SSYIDKRKKPNLSRRTSTLTRPKVPPAPPVKKQDSEEDG INPLTCASTEPKDS---PSKQ	554
Dr-SH3PXD2a	SSYIDKRKKPNLSRRTSTLTRPKVPPAPPVKKQDSEEGPSLGGSA-SKAPES---PQR-	443
Tr-SH3PXD2a1	SSYIDKRKKPNLSRRTSTLTRPKVPPAPPVKKQDSEEAPTS DNLP-FKASDP---PSRP	564
Tr-SH3PXD2a2	CSYIDKRKKPNLSRRTSTLTRPKVPPAPPVKKQDSEEAPTS DNLP-SEAPESPVYQGRP	544
Hs-SH3PXD2b	ATFIDKYKK-----TSNASRPNFLAPLPHEVTQLRLGAAAENNTGSEATG---PSRP	469
Cf-SH3PXD2b	ATFIDKYKK-----TSNASRPNFLAPLPNEVTQLHLGAAAAMENNTGSEAIG---PSRP	444
Mm-SH3PXD2b	ATFIDKYKK-----TSSASRPNFLAPLPHEMTQLRLGAAAATENNTGPEAVG---PSRP	469
Rn-SH3PXD2b	ATFIDKYKK-----TSSASRPNFLAPLPHEMTQLRLGAAAATENNTGPEAVG---PSRP	468
Gg-SH3PXD2b	ATFIDKYKK-----TSNASRPNFLAPLPSEMAQLRLGAAAESSAT-EEATG---PCRP	441
Dr-SH3PXD2b	VTFIDKYKK-----TSSASRPNFLAPLPGEMEQLKLEDTSNSTNS---EHT---WSKP	453
Lg-p47phox-like	SAYLVERRK-----DAPVAAPPVPP-----	459
Ci-SH3PXD2	ETYISKTTKP-----KPTPARPQPPSFPKTELQRASHTKVTRSSSLRQDKPA-----	454
Ci-p47phox	SSYLESKTT-----EAEPARNSNPGFSAKMVLPKIEETGAGRSYDPGQAKQK-----	437
Sp-p47phox	SNYIEKRE--VSSRINGKPSLGNLDEETGEDKVPPVLPARPAFGSGGSGAFKP-----	472
Nv-p47phox-like	SSYLKREKSVKKATTSPKPARFQAQELRTKPKVMPDIPDTGSKPKPARPP-----	460
Mb-p47phox-like	ADALQEENGVKATATSGAGVGTVPVKVDTRPSVAPQSSAGVGAIAAALAQRAS-----	471
Hs-NOX01	E-RRPRRQGRPRGCVDSVPHTTEQ-----	371
Cf-NOX01	ASKYPPRAGQ-----	357
Mm-NOX01	GQEQGTRVPR-----	349
Rn-NOX01	GQEQRTQVPP-----	354
Gg-NOX01	QQSA-----	379
Xt-NOX01	-----	
Dr-NOX01	Q-----	384
O1-NOX01	LATKTR-----	406

Tn-NOX01

ESVKLPLARFSCSFRLLHA----- 447

Mm-p47phox	-----			
Rn-p47phox	-----			
Cf-p47phox	-----			
Hs-p47phox	-----			
Gg-p47phox	-----			
Xt-p47phox	-----			
Tn-p47phox	-----			
Tr-p47phox	-----			
Ol-p47phox	-----			
Dr-p47phox	-----			
Mm-SH3PXD2a	KYEEPEYDVPAFG-FDSEPEMNEE-----PSGDRGSGDKHPAQPRRISPASSLQRAH	601		
Rn-SH3PXD2a	KYEEPEYDIPAFG-FDSEPELNEE-----PTEDRGSGDKHPAQPRRTSPASSLQRAH	601		
Hs-SH3PXD2a	KYEEPEYDIPAFG-FDSEPELSEE-----PVEDRASGERRPAQPHRSPASSLQRAR	574		
Gg-SH3PXD2a	KYEEPEYDVPTFG-FDSECEVNES-----HREE-GTPEKRLFQPLKPSPVSSLQKAK	606		
Xt-SH3PXD2a	IYEEPEYDVPAFG-FDLEVELNVTN-----QSHGEELIQENLFQPSRSPVSSLQRPK	606		
Dr-SH3PXD2a	VYEEPEYDVPAFG-FDSELDNPPKPKTHNSPKPEP-RKFEIKSNPAAAERIAQAGKASP	501		
Tr-SH3PXD2a1	VYEEPEYDVPTFG-CEREPTDNPVKNERNPDVKTTSQVSDKYHSSPAFTKAAPPVCKAPS	623		
Tr-SH3PXD2a2	VYEEPEYDVPAIGDLLESEFEFLRGESSLVDGKNEDTSSEKGSMSKPSPASSLHSAS	604		
Hs-SH3PXD2b	LPDAPHGVMSGLPWSKDWKGSKD-----VLRKASSDMSASAGYEEISDPDMEEKP	520		
Cf-SH3PXD2b	LPDAPHGAMDSGMPWSKDWKGGKE-----VPRKASSDMSAGYEEISSPDLEEKP	495		
Mm-SH3PXD2b	LPEAPHGAVDSGMLWSKDWKGGKE-----APRKASSDLSASTGYEEISDPTQEEKP	520		
Rn-SH3PXD2b	LPEAPHGAVDSGMLWSKDWKGGKE-----APRKASSDLSASTGYEEISDPTQEEKP	519		
Gg-SH3PXD2b	LPEAPPNGMDCGMKRAKDWKG-KE-----AT--ESGDLAFTCGYEEISDRDVEEKP	489		
Dr-SH3PXD2b	LPDEPSS--NSDLSTRSKLREWKP-----NAAKSSSHFSGPLP-PPSSPTAEKPK	501		
Lg-p47phox-like	-----	HAASKRASRVIIYKTC	475	
Ci-SH3PXD2	-----	VMDRVEHTYSNDTNFRNFKPKPTLPKK	481	
Ci-p47phox	-----	LIG-----	SPLKL	445
Sp-p47phox	-----	VAKKSTPPPVDRSNSPSFTNRK	494	
Nv-p47phox-like	-----	VSKKITIIPNNELSN-SFQN--	479	
Mb-p47phox-like	-----	TMATGTASKPLKPTKPTATPGKATPSK	498	
Hs-NOX01	-----			
Cf-NOX01	-----			
Mm-NOX01	-----			
Rn-NOX01	-----			
Gg-NOX01	-----			
Xt-NOX01	-----			
Dr-NOX01	-----			
Ol-NOX01	-----			
Tn-NOX01	-----			

Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	

Mm-SH3PXD2a	FKVGE-----SSEDVALEEETIYENEGFRPYTEDTSLARGSSGSDSPGSSSLSLAVK	654
Rn-SH3PXD2a	FKVGE-----SSEDVALEEETIYENEGFRPYTEDTSLARGSSGSDSPGNSSSLAMK	654
Hs-SH3PXD2a	FKVGE-----SSEDVALEEETIYENEGFRPYAEDTSLARGSSGSDSPGSSSLSLTRK	627
Gg-SH3PXD2a	FKVGE-----SSEDVANEETIYENEGFRRYVEDALS NKESSGSDSQKSSSLIRR	659
Xt-SH3PXD2a	FRVGE-----FSEDVTNEETIYENEGFRPLVEEALSSKESSGSDSQKSS--VTIQR	657
Dr-SH3PXD2a	LLKVMTSPLRKRNSLENINKEEVIYENEGFR---FSSDDFASGCDS-HTPR---SLTLGR	554
Tr-SH3PXD2a1	GVTHQRASFR---SVEEVSKAECIYENQFRRGAGSERNLVKGCEPNSPKSYHSSTVPR	680
Tr-SH3PXD2a2	FKMGESFEDGHDAGGEAEGDEECIYENDGFR---PFKETPERQCSDSSSSRTSVFSESS	661
Hs-SH3PXD2b	SLPPR-----KESI IKSEGELLERERERQRTEQLRGPTPKPPGVILPMMPAKHIPPA	572
Cf-SH3PXD2b	SLPPR-----KESI IKSEGELQERER--QRMEQLRGSSPKPPGMILPMIPAKHTPPA	545
Mm-SH3PXD2b	SLPPR-----KESI IKSEEELLERER--QKMEPLRGSSPKPPGMILPMIPAKHAPLA	570
Rn-SH3PXD2b	SLPPR-----KESI IKSEEELLERER--QKMEPHRGSSPKPPGVILPMIPAKHAPLA	569
Gg-SH3PXD2b	SLPPR-----KESI IKSEGELLERQR-----PPPKPPGMILMIPPKQSAAP	531
Dr-SH3PXD2b	ALPPR-----RESINKS-LELEDKPK--AELSKPLPKPPVPGVIAPLVTPKAAPLK	550
Lg-p47phox-like	LFMAE-----NEGELGFDEGET-----	492
Ci-SH3PXD2	PLKPA-----VNNQKPTFNAGNGQTPLPN-----	505
Ci-p47phox	KLEGK-----ERNTPFQLQAK-----	461
Sp-p47phox	AVTNN-----GRGGGDVRRGSG-----	512
Nv-p47phox-like	-----DLKSALRSAG-----	489
Mb-p47phox-like	LATPAR-----SSGPKSDGATPPTLPLRPTMSGGTPAKPVKPAKSTPDASSKPAP	550
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	NSPKSDSPKSSSLKLAEKNAQAELGKNQSNISFSSSVTISTTC--SSSSSSSSLSKNN	712
Rn-SH3PXD2a	NSPKSDSPKSSSLKLAEKNAQAELGKNQSNISFSSSVTIGTTS--SSSSSSSSLSKNS	712
Hs-SH3PXD2a	NSPKSGSPKSSSLKLAEKNAQAEMGKNHSSASFSSSITINTCCSSSSSSSSLSKTS	687
Gg-SH3PXD2a	NSPCSI SPKSS-FMKPKMEKDIQPDVGKCHYSR-----S	692
Xt-SH3PXD2a	NSPTAVSSKPP-LLKYKSERNVQKETKNVSFST-----S	690
Dr-SH3PXD2a	KPFGSSSGGKPLRKVSPDLN-RSHSLG-----RA	583
Tr-SH3PXD2a1	RPSGTSPLAGRP IKTMTPETNRRSQTLGRRADLSC-----RS	717
Tr-SH3PXD2a2	KTAGGGWRAGG--SKFKGDSNGSSFSNK-----FE	689
Hs-SH3PXD2b	RDSRRPEPKPKDKSRLFQLKNEMGLECG-----	599
Cf-SH3PXD2b	RDGRRSEPKPKDKGKLLQLKNEMGLECG-----	572
Mm-SH3PXD2b	RDSRKPEPKLDKSK-FPLRNDMGLECG-----	596
Rn-SH3PXD2b	RDSKKPEPKPKDKSK-FPLRNDMGLECG-----	595
Gg-SH3PXD2b	KDSKKPEPKPEKGLFQLKNEMGLECG-----	558

Dr-SH3PXD2b	PDKPPEMKKDDKNKQ-----	565
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	
Nv-p47phox-like	-----	
Mb-p47phox-like	VKPAKSTPDTPSKPARPTMSG-----	572
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	GDLKPRSASDAGIRDTPKV----GTKKDPDVKAGLASCARAKPSVRPKPVLN--RAESQ	765
Rn-SH3PXD2a	GDLKPRSASDAGIRDSPKG----GTKKDPDVKTGLASCVRAPKPSVRPKPVLN--RAESQ	765
Hs-SH3PXD2a	GDLKPRSASDAGIRGTPKV----RAKKDADANAGLTSCPRAPKPSVRPKPFLN--RAESQ	740
Gg-SH3PXD2a	EETKPRSASDVGLRSMPT----GMKKEP---GQSPSIRAKPIVRPKPFLN--KADSQ	741
Xt-SH3PXD2a	EEIKPRSASDVGLRAVPKV----STKKDAEQKQAVVPSTRAKPTVRPKPFLS--KADSQ	743
Dr-SH3PXD2a	ERHSSKLFSDSARNPKREP----VMRKDVEIRIGQSPLARPKPVVRPKPLLT--KSEPQ	637
Tr-SH3PXD2a1	HDSSPHSSSDELSRAPKK-----TFSQGVEQRLGQSPSTRPKPSVRPKPLLA--KSEAQ	769
Tr-SH3PXD2a2	EGTGPKSALAESQN--KREQ---EESKPVSTLSSS--KLKPVVRPKPQLA--KTS--	736
Hs-SH3PXD2b	HKVLAKEVKKPNLRPISK--SKTDLPEEKPDATPQNPFLKSRPQVRPKPAPSPKTEPPQ	656
Cf-SH3PXD2b	HKVLAKEVKKPNLRPISK--SKADLPEEKPEGIPQNPFLKSKPQVRPKPAPSPRTEPPQ	629
Mm-SH3PXD2b	HKVLAKEVKKPNLRPISR--SKAELSEEKVDPTSQNLFMKSRPQVRPKPTPSPKTEPAQ	653
Rn-SH3PXD2b	HKVLAKEVKKPNLRPISR--SKAELPEEKVEPNPQNLFLKSRPQVRPKPTPSPKTEPAQ	652
Gg-SH3PXD2b	HKVSAKEVKKPNLRP IVKPTKPAEPVEDKPEPITQNPFLKSRPQIKPKPAAAARTDPPP	618
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	
Nv-p47phox-like	-----	
Mb-p47phox-like	-----VKPKPSLPGRPEPAANKVPAKPA	595
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	

Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	SQEKMDISSLRQLRPTGQLRGG-LKGSRSEDESELPPQMASE---GSRRGSADIIPLTA	820
Rn-SH3PXD2a	SQEKMDISSLRQLRPTGQLRGG-LKGSRSEDESELPPQTASE---GSRRGSADIIPLPA	820
Hs-SH3PXD2a	SQEKMDISTLRRQLRPTGQLRGG-LKGSKSEDESELPPQTASEAPSEGSRRSSDLITLPA	799
Gg-SH3PXD2a	SQEKMDISTLRRQLRPTGQLRGG-LKGSRSESESESPHTASENHDDHVRRGSADLITAPS	800
Xt-SH3PXD2a	NQDKMDISSLRQLRPTGQLRSG-LKGSKSESEENPPKTALENADSKPRRRSVDLTSNTS	802
Dr-SH3PXD2a	SPERMDISSIRRHLRPTGSLRQGAIRAMRGEDSETASVVSSE--DSTSSRSTSDLSSVYS	695
Tr-SH3PXD2a1	SPERMDMSSLRQLRPTSQFQHG-LKPSRGEDSETASVISSE--DSMCSRSTSDLSSVYS	826
Tr-SH3PXD2a2	SSEQMDISSLRQLRPTGQLKNS--IKMKNEDESETASVISSE--DSFSSQSTDLSSIYS	792
Hs-SH3PXD2b	GEDQVDICNLRSKLRPAKSQDKSLLDGEGPQAVGGQDVAFSR-----	698
Cf-SH3PXD2b	GEDQVDICNLRSKLRPAKSQEKPLLDGEGS----QDVACSR-----	666
Mm-SH3PXD2b	SEDHVDIYNLRSKLRPAKSQEKALLDGESHHAAGSHDTALSR-----	695
Rn-SH3PXD2b	GEDQVDIYNLRSKLRPAKSQEKALLDGESHHAAGGHDTALGR-----	694
Gg-SH3PXD2b	ADDKLDICSLRSKLRPAKQPEKPEQDTAAS----ESSCST-----	655
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	
Nv-p47phox-like	-----	
Mb-p47phox-like	RPGRPDPASSVGVAVAASPASNAKKARAKSDFEGQPGESISLK-----	638
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	

Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	T---TPPCVPKKEWEG-QGATYVTC SAYQKVQDSEISFPAGA EVHVLEKAVSGWWYVRFG	876
Rn-SH3PXD2a	T---TPPCVPKKEWEG-QGTAYVTC SAYQKVQDSEISFPAGA EVHVLEKAVSGWWYVRFG	876
Hs-SH3PXD2a	T---TPPCPTKKEWEG-PATSYMTCSAYQKVQDSEISFPAGVEVQVLEKQESGWWYVRFG	855 (4 th SH3)
Gg-SH3PXD2a	RGIFCSSHPAKTEQENDTRCFYVTTDSYQKVQDSEICFPAGVEVEVLEKQASGWWYLYKG	860
Xt-SH3PXD2a	Q---TSSNNDKSEESA EQKSFYATSTYQKVLDSEISFPVGA KIEVLDKQDSGWWYIKYK	859
Dr-SH3PXD2a	K-----GSRGGESDHESVLFRTT DAYERAQESEL SFPAGVEVEVLEKQESGWWFVRWG	748
Tr-SH3PXD2a1	K-----GSRCDSDVEGPNLYRSLD DAYKKVQDSEV SFPAGVEVEVLEKEQSGWWYIRWG	879
Tr-SH3PXD2a2	K-----GSRGDSLEGCAVYRTTDPYEKVQESEL SFPAGVEVEVLEKQESGWWYVVRWG	845
Hs-SH3PXD2b	-----SFLPGEGPGR AQDRTG	714
Cf-SH3PXD2b	-----SFLPGEGPGR TQDRTG	682
Mm-SH3PXD2b	-----SFLPGEGPGHGQDRSG	711
Rn-SH3PXD2b	-----SFLPGEGPGRGQDRSG	710
Gg-SH3PXD2b	-----PAVAPEASGRFQERPS	671
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----VDVMDKTD AEWWLVIRIG	509
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----GVGAGGNMMAALKKQLEKSS	532
Nv-p47phox-like	-----PSAHGVEEVYVAKSDYEDKS	509
Mb-p47phox-like	-----AGEIVTVEEEAATGWWFVIKA	659
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	E-LEGWAPSHYLVAEENQQPDTASKEGDTG--KSSQNEGKSDSLEKIEKR VQALNTVNQS	933
Rn-SH3PXD2a	E-LEGWAPSHYLVPEENQQPDPDSKEPDTV--KSTQNEGKSDSLEKIEKR VQALNTVNQS	933
Hs-SH3PXD2a	E-LEGWAPSHYLVLDENEQPDPSGKELDTVPAKGRQNEGKSDSLEKIEKR VQALNTVNQS	914
Gg-SH3PXD2a	D-MEGWAPSHYLALPDNQQ-ETTSVETDASFARNRKNENKSN SLEKIEKR VQALNTINQS	918
Xt-SH3PXD2a	D-SEGWAPSHFLEEVDNKKADTSIAESEST--KIKKNENKSN SLEKIEKR VQALNTINQS	916
Dr-SH3PXD2a	S-DEGWVPTFYLEPIKHTH-NVGIQESRDSPLVDLGSTNKSNSLEKNEQR VQALNNLNQQ	806
Tr-SH3PXD2a1	S-EEGWAPSYYLESVRQVG-DAGS-----GGGKSDSLEKNEQ NVLTLNNINI Q	925
Tr-SH3PXD2a2	D-TEGWAPTYYLEPLRQQD-DFAGSESEGSP-SKPGSLSKSN SLEKNEQR VQALNNINQN	902
Hs-SH3PXD2b	K-QDGLSPKEISCRAPPRP-----AKTTDPVSKSVPVPLQEAP-QQRPVVPPR	760
Cf-SH3PXD2b	K-QDGLSPKEVPCRAPPKP-----VKTADVPKVNPTPLQEAS-PQRPVVLP R	728
Mm-SH3PXD2b	R-QDGLSPKETPCRAPPRP-----AKTTDPGPKNVPVPVQEATLQQRPVVPPR	758

Rn-SH3PXD2b	R-QDGLSPKETPCRAPPRP-----AKTTDPGPKNVVPVQEAT-QQRPVVPPR	756
Gg-SH3PXD2b	V-ENKALPK-----SPPGP-----AVAP-----AAREPT-PQRPVVPPR	703
Dr-SH3PXD2b	-----	
Lg-p47phox-like	N-EEGWAPRSYIEQVEIED-----TRG-----	530
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	V-GESSSPAIPARPGVAPK-----	550
Nv-p47phox-like	D-GENWAPAN-FLEMKSPE-----	526
Mb-p47phox-like	DKSEGWAPADYLDLTGSNS-----	678
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	-----KRATPPIPSKPPGGFGKTSGT---VAVKMRNGVRQVAVRPQSVFVSPP---	978
Rn-SH3PXD2a	-----KRATPPIPSKPPGGFGKTSGT---VAVKMRNGVRQVAVRPQSVFVSPP---	978
Hs-SH3PXD2a	-----KKATPPIPSKPPGGFGKTSGT---PAVKMRNGVRQVAVRPQSVFVSPP---	959
Gg-SH3PXD2a	-----KRATPPIPSKPPGGFSKTSG----PVKMRNGVRQLAVRPQSVFVSPP---	961
Xt-SH3PXD2a	-----KRATPPVPSRPPGGFSKPPGPG-SNVVKLNRNGVKQVTVRPQSVFVSAP---	963
Dr-SH3PXD2a	----NLRSMNSPSPPIPSKPPGGFSKPTAMLNSSVRMRNGVRQAAVRPQSVFVSPPQPL	862
Tr-SH3PXD2a1	GRNQQRHRLKRNTPPIPSKPPGGFSKPSGMVNGG-VRMNRNGVRQVAVRPQSVFVTTTQSA	984
Tr-SH3PXD2a2	-----LKKVTPPIPSKPPGGLSKPISFFGSR---KQNSAKQVVRPQSVLISAP---I	949
Hs-SH3PXD2b	-----RPPPPKKTSSSS---RPLPEVRGPQCEGHESRAAPTGRALLVPP---	802
Cf-SH3PXD2b	-----RPPPPKKTSSSS---RPLPEVRGPQREASEGKAAPAGRALLVPP---	769
Mm-SH3PXD2b	-----RPPPPKKTSSSPLSCRPLPEVRGAQRE--ESRVAPAAGRALLVPP---	801
Rn-SH3PXD2b	-----RPPPPKKTSSSPLSCRPLPEVRGSQRE--ESRAIPASGRALLVPP---	799
Gg-SH3PXD2b	-----RPPPPKKTTSVPAG--PVPEAR-----ASPLGRPMLVPP---	736
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----KPPAPPK-----GKPSIQFPLPAR---	549
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	
Nv-p47phox-like	-----	
Mb-p47phox-like	-----DSQPGAPAKPAKPSKPSK-----	696
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	

Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	PKDNNLSCALRRNESLTATDSLRLG-----VRRNSSFSTARSAAAEEKGRLA-----	1024
Rn-SH3PXD2a	PKDNNLSCALRRNESLTATDSVRG-----VRRNSSFSTARSAAAEEKGRLA-----	1024
Hs-SH3PXD2a	PKDNNLSCALRRNESLTATDGLRG-----VRRNSSFSTARSAAAEEKGRLA-----	1005
Gg-SH3PXD2a	PKDNNLSCSLRRNESLTATDHLRN-----VRRNSSFSNARSQPGDVKGKQP-----	1007
Xt-SH3PXD2a	PKDNNISCNLRRNESLSATDHLRG-----VRRNSSFNTVRSQPNQTKISSS-----	1009
Dr-SH3PXD2a	KETNIHTGSLRRNESLGAGDHLRS---TGGVRRNSSFTAVRPQPVTDVVRV-----	910
Tr-SH3PXD2a1	KDSHYMTGSLRRNDSLSRSDHYGSGSATLGVRRNASFSTVRPHVVESHTRPVERSGVGS	1044
Tr-SH3PXD2a2	MDPPSSLGALRRNESLNSTDHPRV---SPTVRRNASFGTAPRGLVANNLALP-----	998
Hs-SH3PXD2b	KAKPFLSNLGGQDDTRGKGLGP-----	826
Cf-SH3PXD2b	KAKPFLSNSSGGHDDMRGKGLGP-----	793
Mm-SH3PXD2b	KAKPFLSNSSVGQDDMRGKGLGP-----	825
Rn-SH3PXD2b	KAKPFLSNSSVGQDDIRGKGLGP-----	823
Gg-SH3PXD2b	KARPFLS--AAIQDEAKVKSSVGP-----	758
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----	
Nv-p47phox-like	-----	
Mb-p47phox-like	-----	
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	

Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	-ERAASQGSESP--LLPTQRKGIPVSPVRPKPIEKSQFIHNNL-KDVYISIADYEGDE-E	1079
Rn-SH3PXD2a	-ERAASQGSESP--LLPTQRNGIPVSPVRPKPIEKSQFIHNNL-KDVYVSIADYEGDE-E	1079
Hs-SH3PXD2a	-ERAASQGS DSP--LLPAQRNSIPVSPVRPKPIEKSQFIHNNL-KDVYVSIADYEGDE-E	1060 (5 th SH3)
Gg-SH3PXD2a	-ERSGSEGSETTS-NLPTQRNGIPVSTVRPKPIEKSQFIHNNL-KDIYVSIADYEGDE-E	1063
Xt-SH3PXD2a	-AKPDGDMSESETSIRPSQKNGIPVSTVRPKPIEKSQFIHNNL-KDIYISIADYEGDD-E	1066
Dr-SH3PXD2a	AGTTITAP-AGSSSPLIAQRNGIPISTVRPKPIEKMLIHNLL-REYVYSIADYRGDE-E	967
Tr-SH3PXD2a1	SGSSLSTGNVQDALARANQRNGIPVSAVRPKPIEKQLIHNLLGRDVYVSIADYCGDE-E	1103
Tr-SH3PXD2a2	-SRNRSGTGSSSESLGLGSVKNSLPVSTVKPKP---HI IHNLL-REIYVSIADYHGDE-E	1051
Hs-SH3PXD2b	-----WGTG---KIGENREKAAAASVPNADGLKDSL YVAVADFEGDK-D	866 (4 th SH3)
Cf-SH3PXD2b	-----WLVG---KIGENREKVAAPFPSADGSKDSL YVAVANFEGDK-D	833
Mm-SH3PXD2b	-----RVTG---KVGETREK--AASFLNADGPKDSL YVAVANFEGDE-D	863
Rn-SH3PXD2b	-----RIAG---KVGETREK--AASFLNADGPKDSL YVAVANFEGDE-D	861
Gg-SH3PXD2b	-----KVISKAVERGEGRER-TSAPFSPNDVSKEAL YVAVADFEGDE-E	800
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	-----LSKPTAQPYCNRDAAYITSSVVDEND	578
Nv-p47phox-like	-----YAKQDKP---AKHVYVALASYHDEDDD	550
Mb-p47phox-like	-----PSMPAKPSRPGSNEASSNLRDDEFLVLD TAYNADGEG	733
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	
Mm-p47phox	-----	
Rn-p47phox	-----	
Cf-p47phox	-----	
Hs-p47phox	-----	
Gg-p47phox	-----	
Xt-p47phox	-----	
Tn-p47phox	-----	
Tr-p47phox	-----	
Ol-p47phox	-----	
Dr-p47phox	-----	
Mm-SH3PXD2a	TAGFQEGVSMEVLEKNPNGWWYCQILDDEVKPFK GWVPSNYLEKKN	1124
Rn-SH3PXD2a	TAGFQEGVSMEVLERNPNGWWYCQILDDEVKPFK GWVPSNYLEKKN	1124
Hs-SH3PXD2a	TAGFQEGVSMEVLERNPNGWWYCQILDGVKPFK GWVPSNYLEKKN	1105
Gg-SH3PXD2a	TAGFQEGVCMVLERNPNGWWYCQIMNGVKPFK GWVPSNYLEKKN	1108
Xt-SH3PXD2a	TVGFQEGVSMEVLEKNPNGWWYCQILDGGKPFK GWVPSNYLEKKN	1111
Dr-SH3PXD2a	TMGFSEGTSLVLEKNPNGWWYCQVLDGLQGRK GWVPSNYLERKK	1012
Tr-SH3PXD2a1	TMGFTEGTCLEVLERNPNGWWYCQVDSLIPRKG WVPNSNYLERK-	1147
Tr-SH3PXD2a2	TMGFPEGTSLEVLDRNPNGWWYCKILDNGKQRK GWVPSNYLERKH	1096
Hs-SH3PXD2b	TSSFQEGTVFEVREKNSSGWWFCQVLSGAPSWEG WIPSNYLRKKP	911

Cf-SH3PXD2b	TSSFQEGTVFEVREKSSSGWWFCQVLSGAPSWEGWIPSNYLKKKP	878
Mm-SH3PXD2b	TSSFQEGTVFEVREKNSGWWFCQVLSGAPSWEGWIPSNYLRRKP	908
Rn-SH3PXD2b	TSSFQEGTVFEVREKNSGWWFCRVLSGAPSWEGWIPSNYLRRKP	906
Gg-SH3PXD2b	TNSFREGTLFEVREKNSGWWFCKVLTGGPCWEGWIPSNYLRRKP	845
Dr-SH3PXD2b	-----	
Lg-p47phox-like	-----	
Ci-SH3PXD2	-----	
Ci-p47phox	-----	
Sp-p47phox	GLSFEEGQRVEVIKKDDSGWWSVRIGT---EGWVPNTFLEKI-	618
Nv-p47phox-like	AISFDEGDEMEVVQQDDSGWWLVKIADK---SGWAPSNFLKQL-	590
Mb-p47phox-like	ELSLRPREKVTVLEKATEWWFCR---NAQQQEGWAPANYSKR-	773
Hs-NOX01	-----	
Cf-NOX01	-----	
Mm-NOX01	-----	
Rn-NOX01	-----	
Gg-NOX01	-----	
Xt-NOX01	-----	
Dr-NOX01	-----	
Ol-NOX01	-----	
Tn-NOX01	-----	