Identification, Functional Characterization, and Pharmacological Analysis of Two Sulfakinin Receptors in the Medically-Important Insect *Rhodnius prolixus*

Supplementary Figures S1 to S4 and
Supplementary Tables S1 to S4

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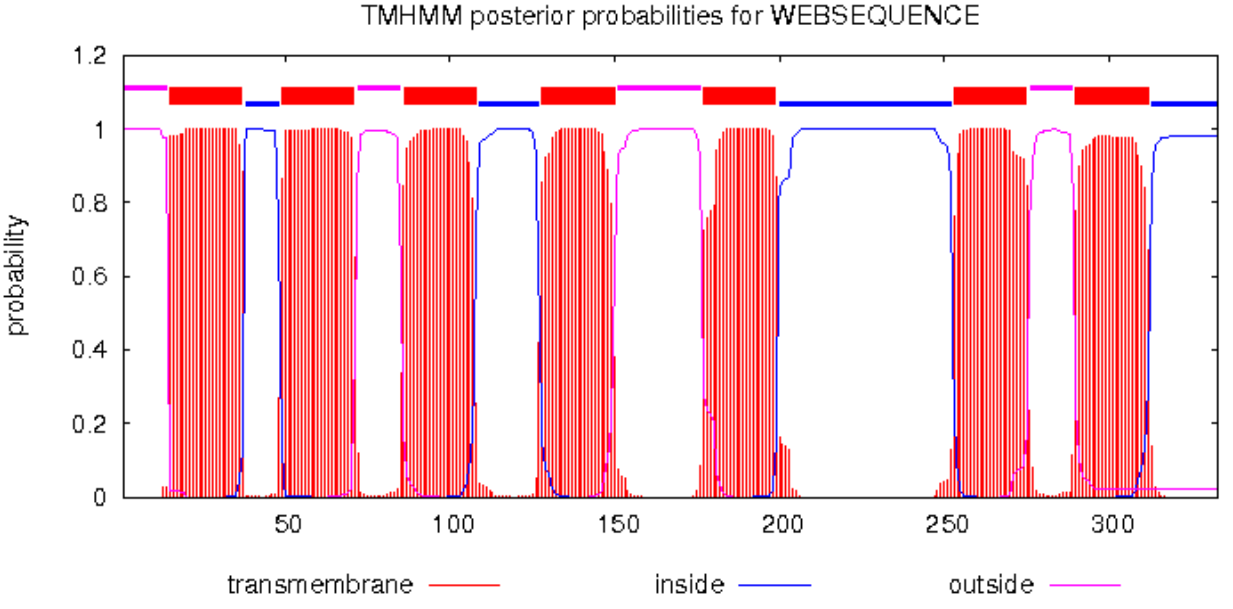
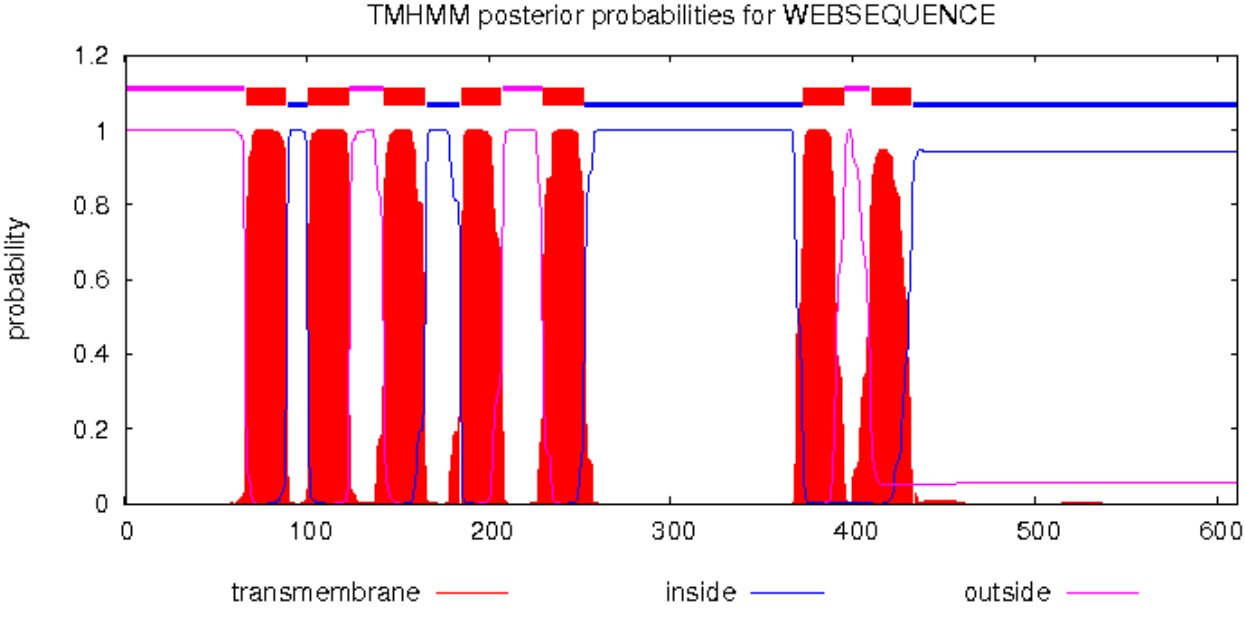
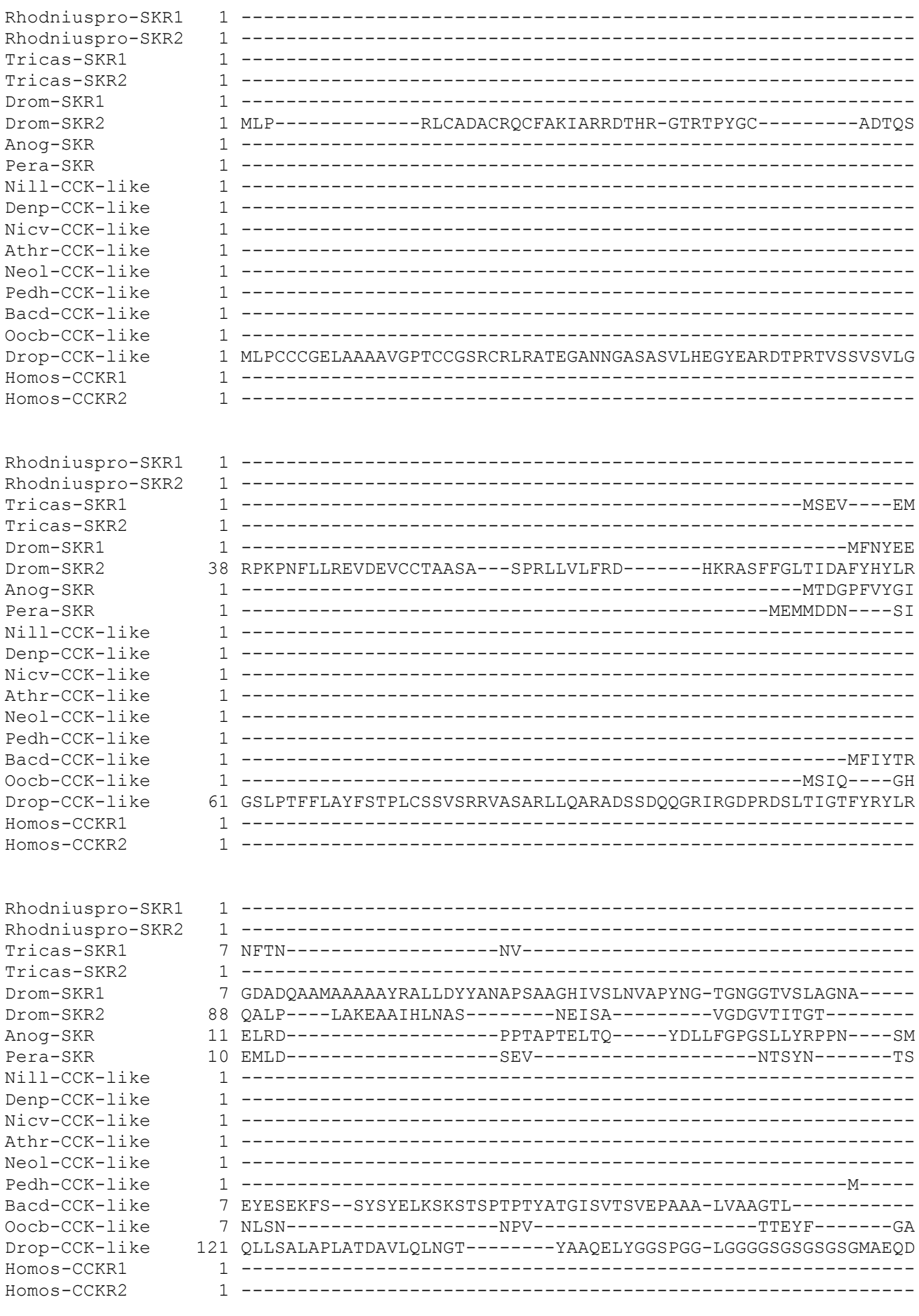
Supplementary Figure S1. Predicted membrane topology of Rhopr-SKR-1's seven transmembrane domains in *Rhodnius prolixus* (via TMHMM server 2.0).


TMHMM posterior probabilities for WEBSEQUENCE
probability
1.2
1
0.8
0.6
0.4
0.2
0
50
100
150
200
250
300
transmembrane
inside
outside

Supplementary Figure S2. Predicted membrane topology of Rhopr-SKR-2's seven transmembrane domains in *Rhodnius prolixus* (via TMHMM server 2.0).


TMHMM posterior probabilities for WEBSEQUENCE
probability
1.2
1
0.8
0.6
0.4
0.2
0
0
100
200
300
400
500
600
transmembrane
inside
outside

Supplementary Figure S3. Amino acid sequence alignment for the *R. prolixus* sulfakinin receptors' transcripts, aligned via Clustal Omega, with homologous receptors. Following the 60% majority rule, identical amino acids are highlighted in black, whilst conserved amino acids are shaded in grey. The seven putative transmembrane domains are indicated via red bars. Dashes were utilized to introduce gaps to maximize homologies. The sequenced used consisted of *Rhodnius prolixus* receptor 1 (GenBank: MK513659) and receptor 2 (GenBank: MK513660), *Tribolium castaneum* sulfakinin receptor 1 (GenBank: AGK29938.1) and receptor 2 (GenBank: XP_972750.1), *Drosophila melanogaster* sulfakinin receptor 1 (GenBank: NP_001097023.1) and receptor 2 (GenBank: NP_001097021.1), *Anopheles gambiae* sulfakinin receptor (GenBank: AAR28375.1), *Periplaneta americana* sulfakinin receptor (GenBank: AAX56942.1), *Nilaparvata lugens* CCK-like receptor (GenBank: XP_022184688.1), *Dendroctonus ponderosae* CCK-like receptor (GenBank: XP_019756917.1), *Nicrophorus vespilloides* CCK-like receptor (GenBank: XP_017773275.1), *Athalia rosae* CCK-like receptor (GenBank: XP_012254014.1), *Neodiprion lecontei* CCK-like receptor (GenBank: XP_015517254.1), *Pediculus humanus* CCK-like receptor (GenBank: XP_002433137.1), *Bactrocera dorsalis* CCK-like receptor (GenBank: XP_011198391.1), *Ooceraea biroi* CCK-like receptor (GenBank: EZA56385.1), *Drosophila persimilis* CCK-like receptor (GenBank: XP_002026780.1), *Homo sapiens* CCK receptor 1 (GenBank: NP_000721.1) and receptor 2 (GenBank: AAA91831.1).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Rhodniuspro-SKR2 1 ----------
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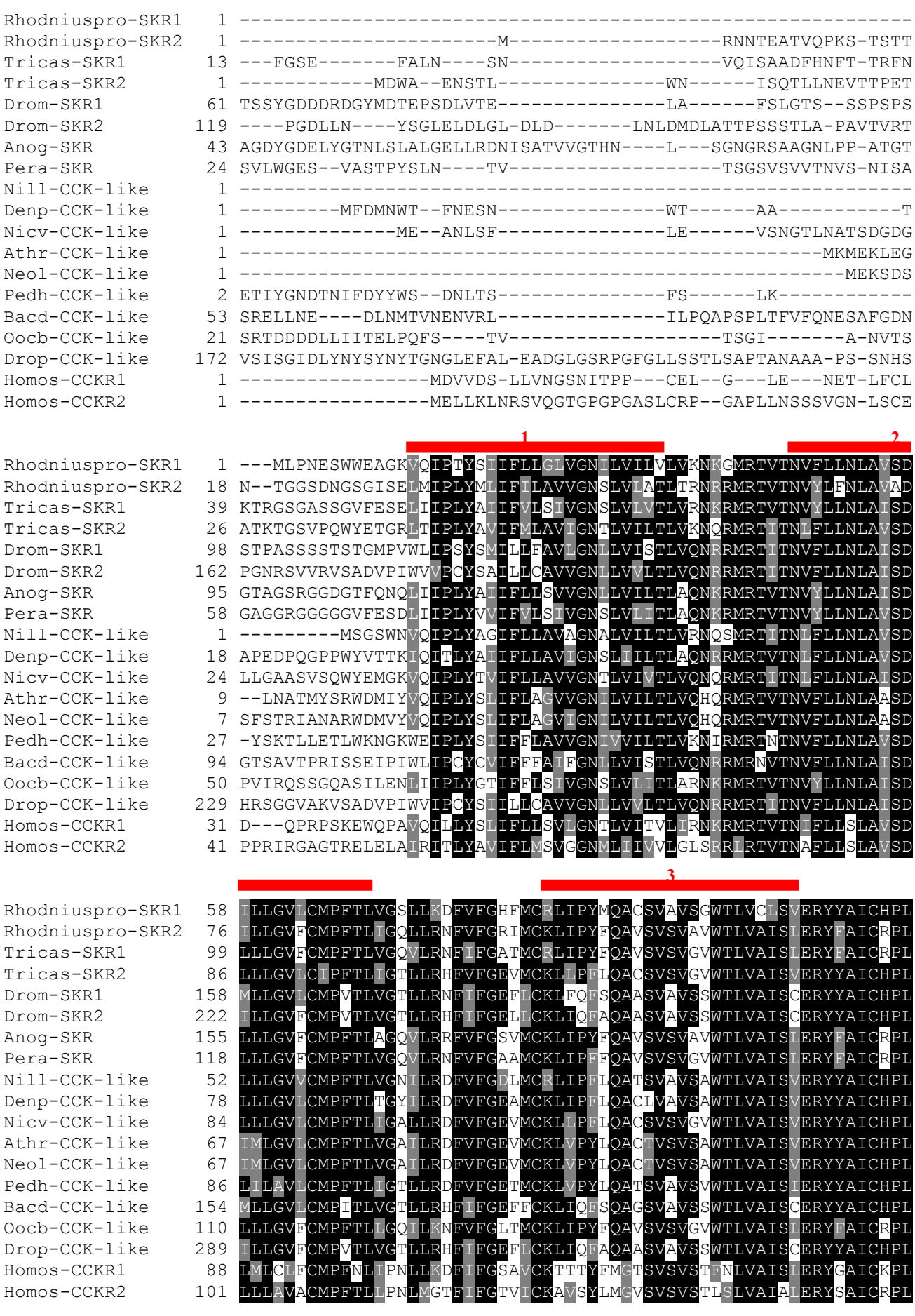
Tricas-SKR2 1 ----------
Drom-SKR1 1 ----------
Drom-SKR2 1 MLP----------RLCADACRQCFAKIARRDTHR-GTRTPYGC---------ADTQS
Anog-SKR 1 ----------
Pera-SKR 1 ----------
Nill-CCK-like 1 ----------
Denp-CCK-like 1 ----------
Nicv-CCK-like 1 ----------
Athr-CCK-like 1 ----------
Neol-CCK-like 1 ----------
Pedh-CCK-like 1 ----------
Bacd-CCK-like 1 ----------
Oocb-CCK-like 1 ----------
Drop-CCK-like 1 MLPCCCGELAAAAVGPTCCGSRCRLRATEGANNGASASVLHEGYEARDTPRTVSSVSVLG
Homos-CCKR1 1 ----------
Homos-CCKR2 1 ----------
Rhodniuspro-SKR1 1 ----------
Rhodniuspro-SKR2 1 ----------
Tricas-SKR1 1 ----------MSEV----EM
Tricas-SKR2 1 ----------
Drom-SKR1 1 ----------MFNYEE
Drom-SKR2 38 RPKPNFLLREVDEVCCTAASA---SPRLLVLFRD-------HKRASFFGLTIDAFYHYLR
Anog-SKR 1 ----------MTDGPFVYGI
Pera-SKR 1 ----------MEMMDDN----SI
Nill-CCK-like 1 ----------
Denp-CCK-like 1 ----------
Nicv-CCK-like 1 ----------
Athr-CCK-like 1 ----------
Neol-CCK-like 1 ----------
Pedh-CCK-like 1 ----------
Bacd-CCK-like 1 ----------MFIYTR
Oocb-CCK-like 1 ----------MSIQ----GH
Drop-CCK-like 61 GSLPTFFLAYFSTPLCSSVSRRVASARLLQARADSSDQQGRIRGDPRDSLTIGTFYRYLR
Homos-CCKR1 1 ----------
Homos-CCKR2 1 ----------
Rhodniuspro-SKR1 1 ----------
Rhodniuspro-SKR2 1 ----------
Tricas-SKR1 7 NFTN----------NV----------
Tricas-SKR2 1 ----------
Drom-SKR1 7 GDADQAAMAAAAAYRALLDYYANAPSAAGHIVSLNVAPYNG-TGNGGTVSLAGNA-----
Drom-SKR2 88 QALP----LAKEAAIHLNAS--------NEISA---------VGDGVTITGT--------
Anog-SKR 11 ELRD----------PPTAPTELTQ-----YDLLFGPGSLLYRPPN----SM
Pera-SKR 10 EMLD----------SEV----------NTSYN-------TS
Nill-CCK-like 1 ----------
Denp-CCK-like 1 ----------
Nicv-CCK-like 1 ----------
Athr-CCK-like 1 ----------
Neol-CCK-like 1 ----------
Pedh-CCK-like 1 ----------M-----
Bacd-CCK-like 7 EYESEKFS--SYSYELKSKSTSPTPTYATGISVTSVEPAAA-LVAAGTL----------
Oocb-CCK-like 7 NLSN----------NPV----------TTEYF-------GA
Drop-CCK-like 121 QLLSALAPLATDAVLQLNGT--------YAAQELYGGSPGG-LGGGGSGSGSGSGMAEQD
Homos-CCKR1 1 ----------
Homos-CCKR2 1 ----------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Rhodniuspro-SKR2
Tricas-SKR1
Tricas-SKR2
Drom-SKR1
Drom-SKR2
Anog-SKR
Pera-SKR
Nill-CCK-like
Denp-CCK-like
Nicv-CCK-like
Athr-CCK-like
Neol-CCK-like
Pedh-CCK-like
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Oocb-CCK-like
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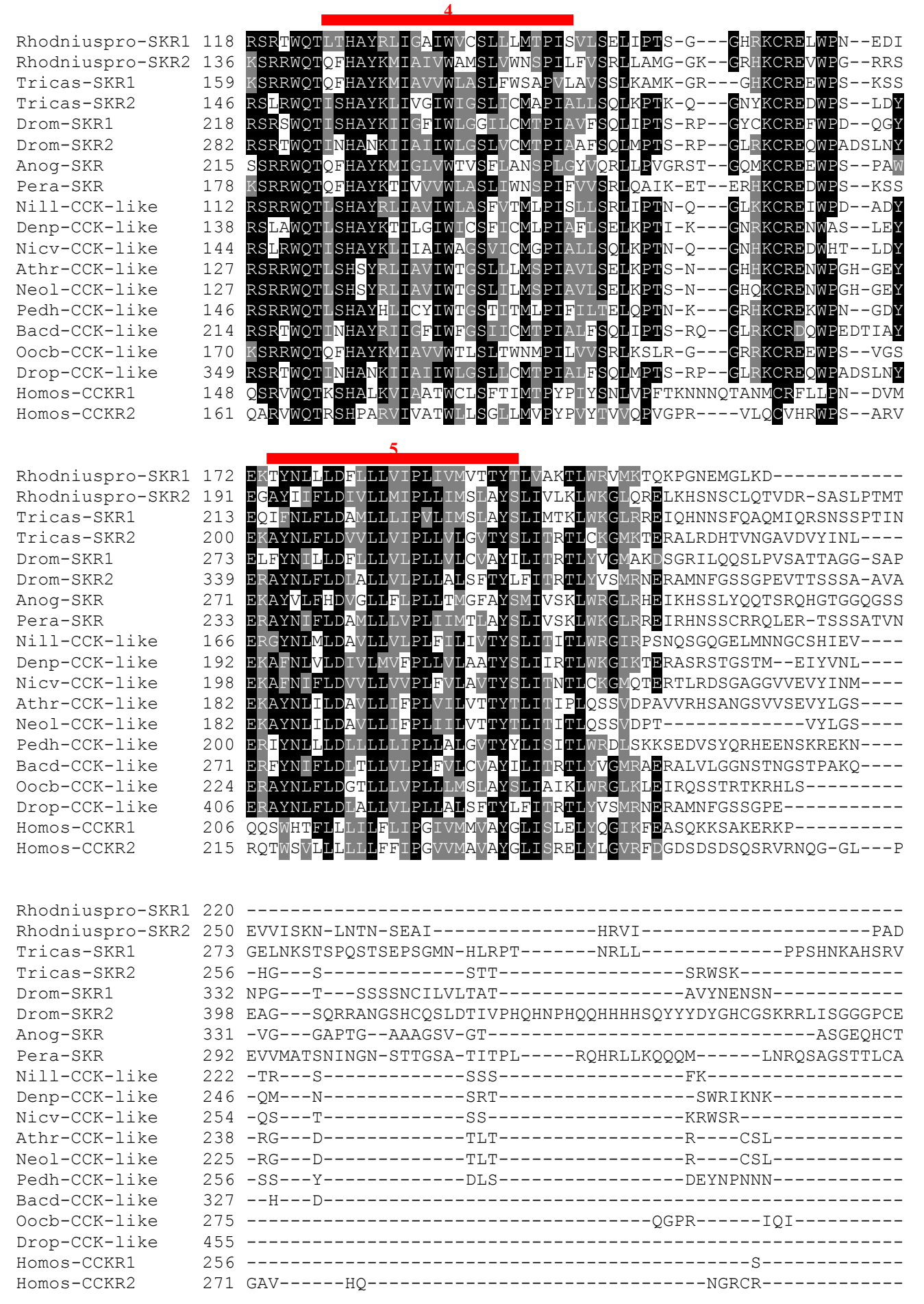
Homos-CCKR1
Homos-CCKR2
1
2
3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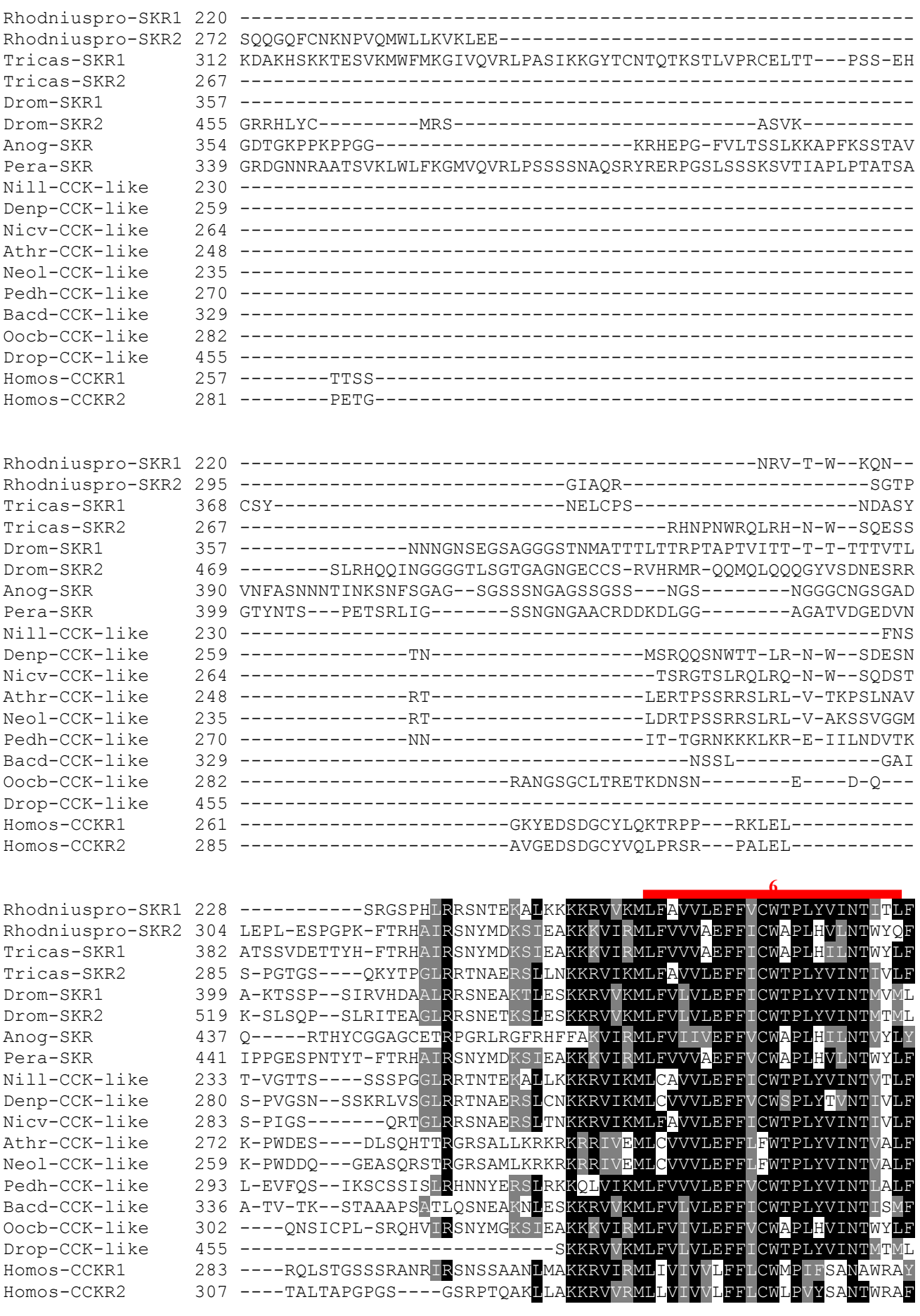
Rhodniuspro-SKR2 136 KSRRWQTQFHAYKMIAIVWAMSLVWNSPILFVSRLLAMG-GK--GRHKCREVWPG--RRS
Tricas-SKR1 159 KSRRWQTQFHAYKMIAVVWLASLFWSAPVLAVSSLKAMK-GR---GHKCREEWPS--KSS
Tricas-SKR2 146 RSLRWQTISHAYKLIVGIWIGSLICMAPIALLSQLKPTK-Q---GNYKCREDWPS--LDY
Drom-SKR1 218 RSRSWQTISHAYKIIGFIWLGGILCMTPIAVFSQLIPTS-RP--GYCKCREFWPD--QGY
Drom-SKR2 282 RSRTWQTINHANKIIAIIWLGSLVCMTPIAAFSQLMPTS-RP--GLRKCREQWPADSLNY
Anog-SKR 215 SSRRWQTQFHAYKMIGLVWTVSFLANSPLGYVQRLLPVGRST--GQMKCREEWPS--PAW
Pera-SKR 178 KSRRWQTQFHAYKTIVVVWLASLIWNSPIFVVSRLQAIK-ET--ERHKCREDWPS--KSS
Nill-CCK-like 112 RSRRWQTLSHAYRLIAVIWLASFVTMLPISLLSRLIPTN-Q---GLKKCREIWPD--ADY
Denp-CCK-like 138 RSLAWQTLSHAYKTILGIWICSFICMLPIAFLSELKPTI-K---GNRKCRENWAS--LEY
Nicv-CCK-like 144 RSLRWQTISHAYKLIIAIWAGSVICMGPIALLSQLKPTN-Q---GNHKCREDWHT--LDY
Athr-CCK-like 127 RSRRWQTLSHSYRLIAVIWTGSLLLMSPIAVLSELKPTS-N---GHHKCRENWPGH-GEY
Neol-CCK-like 127 RSRRWQTLSHSYRLIAVIWTGSLILMSPIAVLSELKPTS-N---GHQKCRENWPGH-GEY
Pedh-CCK-like 146 RSRRWQTLSHAYHLICYIWTGSTITMLPIFILTELQPTN-K---GRHKCREKWPN--GDY
Bacd-CCK-like 214 RSRTWQTINHAYRIIGFIWFGSIICMTPIALFSQLIPTS-RQ--GLRKCRDQWPEDTIAY
Oocb-CCK-like 170 KSRRWQTQFHAYKMIAVVWTLSLTWNMPILVVSRLKSLR-G---GRRKCREEWPS--VGS
Drop-CCK-like 349 RSRTWQTINHANKIIAIIWLGSLLCMTPIALFSQLMPTS-RP--GLRKCREQWPADSLNY
Homos-CCKR1 148 QSRVWQTKSHALKVIAATWCLSFTIMTPYPIYSNLVPFTKNNNQTANMCRFLLPN--DVM
Homos-CCKR2 161 QARVWQTRSHPARVIVATWLLSGLLMVPYPVYTVVQPVGPR----VLQCVHRWPS--ARV
Rhodniuspro-SKR1 172 EKTYNLLLDFLLLVIPLIVMVTTYTLVAKTLWRVMKTQKPGNEMGLKD----------
Rhodniuspro-SKR2 191 EGAYIIFLDIVLLMIPLLIMSLAYSLIVLKLWKGLQRELKHSNSCLQTVDR-SASLPTMT
Tricas-SKR1 213 EQIFNLFLDAMLLLIPVLIMSLAYSLIMTKLWKGLRREIQHNNSFQAQMIQRSNSSPTIN
Tricas-SKR2 200 EKAYNLFLDVVLLVIPLLVLGVTYSLITRTLCKGMKTERALRDHTVNGAVDVYINL----
Drom-SKR1 273 ELFYNILLDFLLLVLPLLVLCVAYILITRTLYVGMAKDSGRILQQSLPVSATTAGG-SAP
Drom-SKR2 339 ERAYNLFLDLALLVLPLLALSFTYLFITRTLYVSMRNERAMNFGSSGPEVTTSSSA-AVA
Anog-SKR 271 EKAYVLFHDVGLLFLPLLTMGFAYSMIVSKLWRGLRHEIKHSSLYQQTSRQHGTGGQGSS
Pera-SKR 233 ERAYNIFLDAMLLLVPLIIMTLAYSLIVSKLWKGLRREIRHNSSCRRQLER-TSSSATVN
Nill-CCK-like 166 ERGYNLMLDAVLLVLPLFILIVTYSLITITLWRGIRPSNQSGQGELMNNGCSHIEV----
Denp-CCK-like 192 EKAFNLVLDIVLMVFPLLVLAATYSLIIRTLWKGIKTERASRSTGSTM--EIYVNL----
Nicv-CCK-like 198 EKAFNIFLDVVLLVVPLFVLAVTYSLITNTLCKGMQTERTLRDSGAGGVVEVYINM----
Athr-CCK-like 182 EKAYNLILDAVLLIFPLVILVTTYTLITIPLQSSVDPAVVRHSANGSVVSEVYLGS----
Neol-CCK-like 182 EKAYNLILDAVLLIFPLIILVTTYTLITITLQSSVDPT-------------VYLGS----
Pedh-CCK-like 200 ERIYNLLLDLLLLLIPLLALGVTYYLISITLWRDLSKKSEDVSYQRHEENSKREKN----
Bacd-CCK-like 271 ERFYNIFLDLTLLVLPLFVLCVAYILITRTLYVGMRAERALVLGGNSTNGSTPAKQ----
Oocb-CCK-like 224 ERAYNLFLDGTLLLVPLLLMSLAYSLIAIKLWRGLKLEIRQSSTRTKRHLS---------
Drop-CCK-like 406 ERAYNLFLDLALLVLPLLALSFTYLFITRTLYVSMRNERAMNFGSSGPE----------
Homos-CCKR1 206 QQSWHTFLLLILFLIPGIVMMVAYGLISLELYQGIKFEASQKKSAKERKP----------
Homos-CCKR2 215 RQTWSVLLLLLLFFIPGVVMAVAYGLISRELYLGVRFDGDSDSDSQSRVRNQG-GL---P
Rhodniuspro-SKR1 220 ----------
Rhodniuspro-SKR2 250 EVVISKN-LNTN-SEAI---------------HRVI--------------------PAD
Tricas-SKR1 273 GELNKSTSPQSTSEPSGMN-HLRPT-------NRLL-------------PPSHNKAHSRV
Tricas-SKR2 256 -HG---S-------------STT-----------------SRWSK---------------
Drom-SKR1 332 NPG---T---SSSSNCILVLTAT-----------------AVYNENSN------------
Drom-SKR2 398 EAG---SQRRANGSHCQSLDTIVPHQHNPHQQHHHHSQYYYDYGHCGSKRRLISGGGPCE
Anog-SKR 331 -VG---GAPTG--AAAGSV-GT----------------------------ASGEQHCT
Pera-SKR 292 EVVMATSNINGN-STTGSA-TITPL-----RQHRLLKQQQM------LNRQSAGSTTLCA
Nill-CCK-like 222 -TR---S-------------SSS-----------------FK----------------
Denp-CCK-like 246 -QM---N-------------SRT-----------------SWRIKNK------------
Nicv-CCK-like 254 -QS---T-------------SS------------------KRWSR-------------
Athr-CCK-like 238 -RG---D-------------TLT-----------------R----CSL-----------
Neol-CCK-like 225 -RG---D-------------TLT-----------------R----CSL-----------
Pedh-CCK-like 256 -SS---Y-------------DLS-----------------DEYNPNNN----------
Bacd-CCK-like 327 --H---D----------
Oocb-CCK-like 275 ----------QGPR------IQI----------
Drop-CCK-like 455 ----------
Homos-CCKR1 256 ----------S----------
Homos-CCKR2 271 GAV------HQ----------NGRCR----------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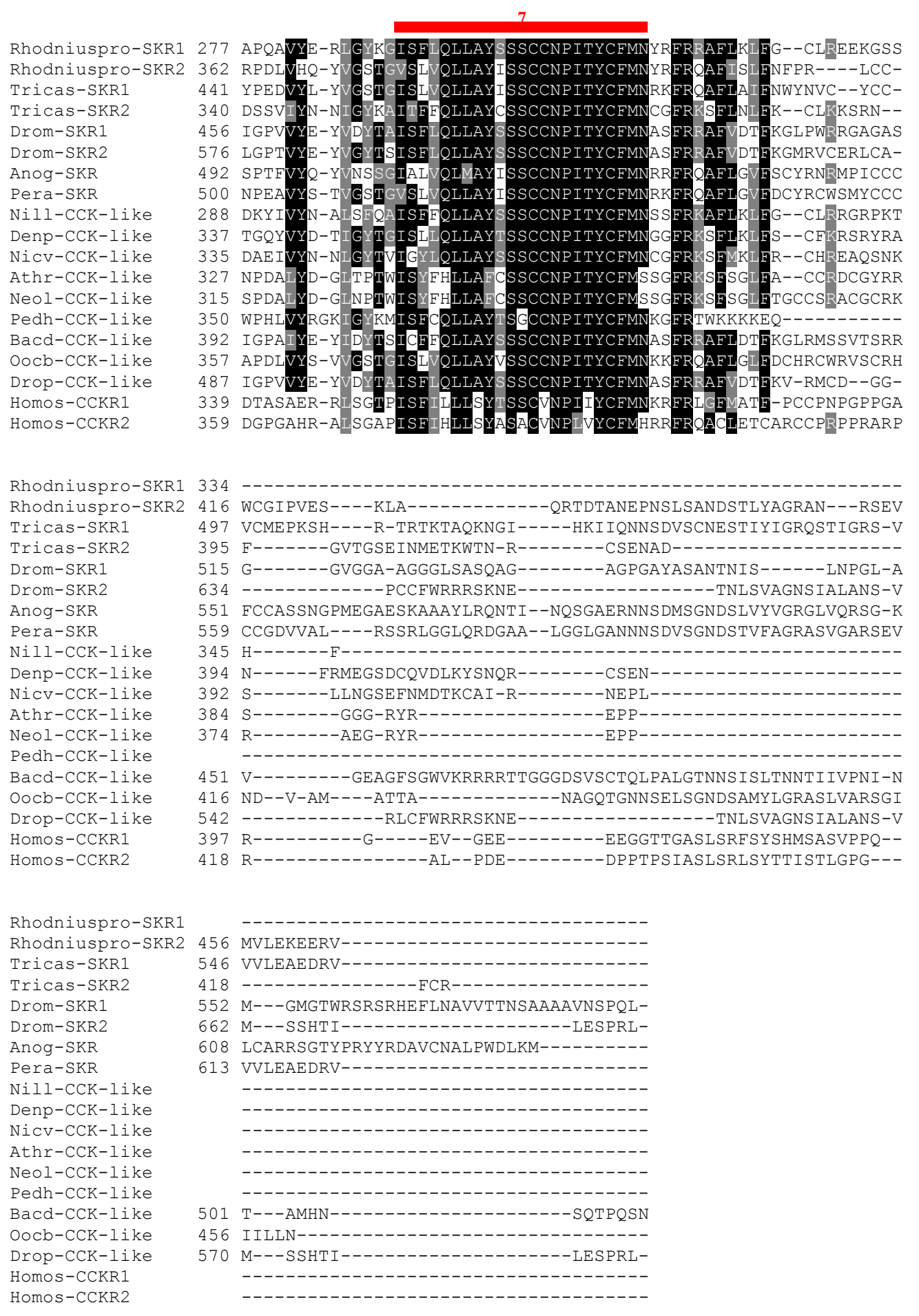
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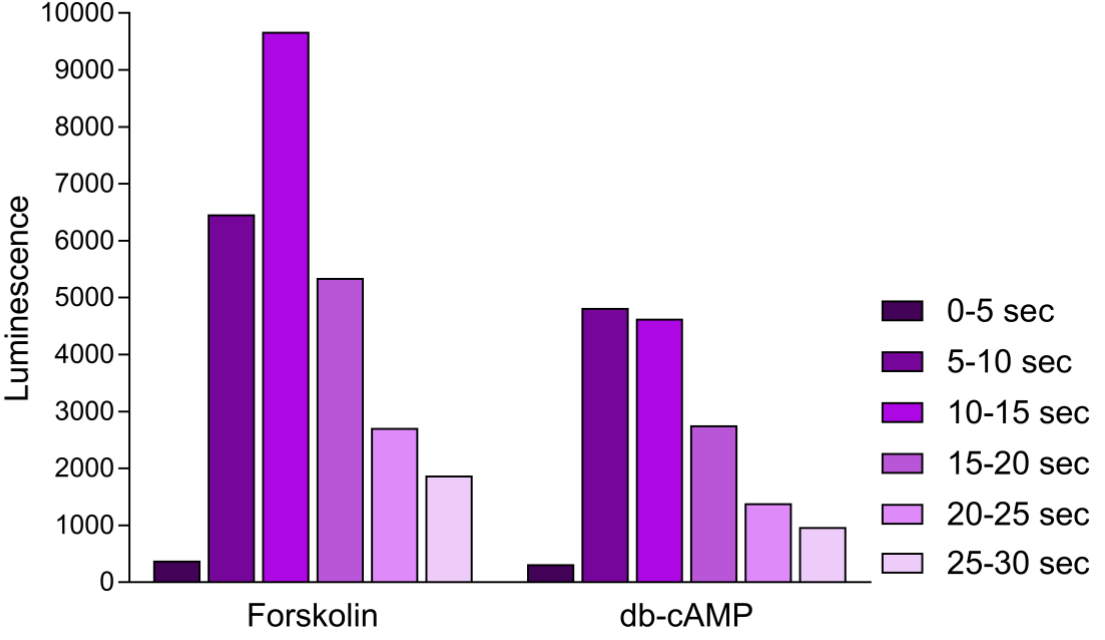
Rhodniuspro-SKR2 362 RPDLVHQ-YVGSTGVSLVQLLAYISSCCNPITYCFMNYRFRQAFISLFNFPR----LCC-
Tricas-SKR1 441 YPEDVYL-YVGSTGISLVQLLAYISSCCNPITYCFMNRKFRQAFLAIFNWYNVC--YCC-
Tricas-SKR2 340 DSSVIYN-NIGYKAITFFQLLAYCSSCCNPITYCFMNCGFRKSFLNLFK--CLKKSRN--
Drom-SKR1 456 IGPVVYE-YVDYTAISFLQLLAYSSSCCNPITYCFMNASFRRAFVDTFKGLPWRRGAGAS
Drom-SKR2 576 LGPTVYE-YVGYTSISFLQLLAYSSSCCNPITYCFMNASFRRAFVDTFKGMRVCERLCA-
Anog-SKR 492 SPTFVYQ-YVNSSGIALVQLMAYISSCCNPITYCFMNRRFRQAFLGVFSCYRNRMPICCC
Pera-SKR 500 NPEAVYS-TVGSTGVSLVQLLAYISSCCNPITYCFMNRKFRQAFLGVFDCYRCWSMYCCC
Nill-CCK-like 288 DKYIVYN-ALSFQAISFFQLLAYSSSCCNPITYCFMNSSFRKAFLKLFG--CLRRGRPKT
Denp-CCK-like 337 TGQYVYD-TIGYTGISLLQLLAYTSSCCNPITYCFMNGGFRKSFLKLFS--CFKRSRYRA
Nicv-CCK-like 335 DAEIVYN-NLGYTVIGYLQLLAYSSSCCNPITYCFMNCGFRKSFMKLFR--CHREAQSNK
Athr-CCK-like 327 NPDALYD-GLTPTWISYFHLLAFCSSCCNPITYCFMSSGFRKSFSGLFA--CCRDCGYRR
Neol-CCK-like 315 SPDALYD-GLNPTWISYFHLLAFCSSCCNPITYCFMSSGFRKSFSGLFTGCCSRACGCRK
Pedh-CCK-like 350 WPHLVYRGKIGYKMISFCQLLAYTSGCCNPITYCFMNKGFRTWKKKKEQ----------
Bacd-CCK-like 392 IGPAIYE-YIDYTSICFFQLLAYSSSCCNPITYCFMNASFRRAFLDTFKGLRMSSVTSRR
Oocb-CCK-like 357 APDLVYS-VVGSTGISLVQLLAYVSSCCNPITYCFMNKKFRQAFLGLFDCHRCWRVSCRH
Drop-CCK-like 487 IGPVVYE-YVDYTAISFLQLLAYSSSCCNPITYCFMNASFRRAFVDTFKV-RMCD--GG-
Homos-CCKR1 339 DTASAER-RLSGTPISFILLLSYTSSCVNPIIYCFMNKRFRLGFMATF-PCCPNPGPPGA
Homos-CCKR2 359 DGPGAHR-ALSGAPISFIHLLSYASACVNPLVYCFMHRRFRQACLETCARCCPRPPRARP
Rhodniuspro-SKR1 334 ----------
Rhodniuspro-SKR2 416 WCGIPVES----KLA----------QRTDTANEPNSLSANDSTLYAGRAN---RSEV
Tricas-SKR1 497 VCMEPKSH----R-TRTKTAQKNGI-----HKIIQNNSDVSCNESTIYIGRQSTIGRS-V
Tricas-SKR2 395 F-------GVTGSEINMETKWTN-R--------CSENAD----------
Drom-SKR1 515 G-------GVGGA-AGGGLSASQAG--------AGPGAYASANTNIS------LNPGL-A
Drom-SKR2 634 ----------PCCFWRRRSKNE----------TNLSVAGNSIALANS-V
Anog-SKR 551 FCCASSNGPMEGAESKAAAYLRQNTI--NQSGAERNNSDMSGNDSLVYVGRGLVQRSG-K
Pera-SKR 559 CCGDVVAL----RSSRLGGLQRDGAA--LGGLGANNNSDVSGNDSTVFAGRASVGARSEV
Nill-CCK-like 345 H-------F----------
Denp-CCK-like 394 N------FRMEGSDCQVDLKYSNQR--------CSEN----------
Nicv-CCK-like 392 S-------LLNGSEFNMDTKCAI-R--------NEPL----------
Athr-CCK-like 384 S--------GGG-RYR----------EPP----------
Neol-CCK-like 374 R--------AEG-RYR----------EPP----------
Pedh-CCK-like ----------
Bacd-CCK-like 451 V---------GEAGFSGWVKRRRRTTGGGDSVSCTQLPALGTNNSISLTNNTIIVPNI-N
Oocb-CCK-like 416 ND--V-AM----ATTA----------NAGQTGNNSELSGNDSAMYLGRASLVARSGI
Drop-CCK-like 542 ----------RLCFWRRRSKNE----------TNLSVAGNSIALANS-V
Homos-CCKR1 397 R----------G-----EV--GEE---------EEGGTTGASLSRFSYSHMSASVPPQ--
Homos-CCKR2 418 R----------AL--PDE---------DPPTPSIASLSRLSYTTISTLGPG---
Rhodniuspro-SKR1 ----------
Rhodniuspro-SKR2 456 MVLEKEERV----------
Tricas-SKR1 546 VVLEAEDRV----------
Tricas-SKR2 418 ----------FCR----------
Drom-SKR1 552 M---GMGTWRSRSRHEFLNAVVTTNSAAAAVNSPQL-
Drom-SKR2 662 M---SSHTI----------LESPRL-
Anog-SKR 608 LCARRSGTYPRYYRDAVCNALPWDLKM----------
Pera-SKR 613 VVLEAEDRV----------
Nill-CCK-like ----------
Denp-CCK-like ----------
Nicv-CCK-like ----------
Athr-CCK-like ----------
Neol-CCK-like ----------
Pedh-CCK-like ----------
Bacd-CCK-like 501 T---AMHN----------SQTPQSN
Oocb-CCK-like 456 IILLN----------
Drop-CCK-like 570 M---SSHTI----------LESPRL-
Homos-CCKR1 ----------
Homos-CCKR2 ----------

Supplementary Figure S4. Luminescence response of forskolin and dibutyryl cAMP (dbcAMP) for Rhopr-SKR-1 transiently expressed in HEK293/CNG cells. Figure displays kinetics of response activation at 5-second intervals for a total of 30 seconds.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7000
6000
5000
4000
3000
2000
1000
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Luminescence
Forskolin
db-cAMP
0-5 sec
5-10 sec
10-15 sec
15-20 sec
20-25 sec
25-30 sec

Supplementary Tables

Supplementary Table S1. Primer sequences utilized to generate the complete Rhopr-SKR-1 and Rhopr-SKR-2 sequences (5’ to 3’).

pDNR (Containing cDNA Library) Plasmid-Specific Primers	
pDNR-For1	GTGGATAACCGTATTACCGCC
pDNR-For2	ACGGTACCGGACATATGCC
pDNR-Rev25	GTGGATAACCGTATTACCGCC
Rhopr-SKR-1 5’ Region Amplification	
SKR1-Rev1	CGAAATCTTTTAGTAAGGATCCA
SKR1-Rev2	ACACATTTGTTACAGTTCTCATTCC
SKR1-Rev3	CCAGGCCAAGTAAAAAGATGATT
Rhopr-SKR-1 3’ Region Amplification	
SKR1-For1	GAAGCTGGTAAAGTACAAATTCC
SKR1-For2	GCAGTTTCTGACATATTACTTGG
SKR1-For3	CTAAAAGATTTCGTGTTTGGAC
Rhopr-SKR-2 5’ Region Amplification	
SKR2-For1	TGGTAACAGTGCGCATTCT
SKR2-For2	GCCAAAACTAAGGAATTACCAAC
SKR2-For3	CCACTGCCATTATCACTGC
Rhopr-SKR-2 3’ Region Amplification	
SKR2-Rev1	TGTCTTTAGTGTGGAATTCGC
SKR2-Rev2	AGCGAAGGAGCGTATATAATATTTC
SKR2-Rev3	GTCCTGTTGATGATTCCGTTAT

Supplementary Table S2. Primers used for the insertion of Rhopr-SKR-1 and Rhopr-SKR-2 into the mammalian expression vector pIRES2-ZsGreen1 with the restriction sites bolded and the kozak sequences underlined (5' to 3').

Rhopr-SKR-1	
Rhopr-SKR-1 Fwd	TACGCA**GAGCTC**GCCACCATGTTGCCAAATGAATCTTG
Rhopr-SKR-1 Rvrs	TCAGCTTGATCCTTTTTCTTC**CCGCGG**TTATTA
Rhopr-SKR-2	
Rhopr-SKR-2 Fwd	ATTATA**GAGCTC**GCCACCATGCGGAACAACACTGAA
Rhopr-SKR-2 Rvrs	CTAAACTCGCTCTTCCTTTTCTA**CCGCGG**TTATTA

Supplementary Table S3. Primer sequences utilized to measure spatial distribution of the transcripts for the Rhopr-SKRs and Rhopr-SKs via Reverse transcriptase quantitative PCR (RT-qPCR), as well as those utilized for the housekeeping genes (5’ to 3’).

Rhopr-SKR-1	
Rhopr-SKR-1 qPCR Fwd	GAAGCTGGTAAAGTACAAATTC
Rhopr-SKR-1 qPCR Rvrs	CGAAATCTTTTAGTAAGGATCCA
Rhopr-SKR-2	
Rhopr-SKR-2 qPCR Fwd	TCCAAGCTGTTTCAGTATCAGTAG
Rhopr-SKR-2 qPCR Rvrs	GCGAATTCCACACTAAAGACA
Rhopr-Housekeeping Genes	
α-TUB Fwd	GTGTTTGTTGATTTGGAACCTACAG
α-TUB Rvrs	CCGTAATCAACAGACAATCTTTCC
β-Actin Fwd	AGAGAAAAGATGACGCAGATAATGT
β-Actin Rvrs	ATATCCCTAACAATTTCACGTTCG
Rp-49 Fwd	GTGAAACTCAGGAGAAATTGGC
Rp-49 Rvrs	AGGACACACCATGCGCTATC
Rhopr-SK (peptides’ transcript)	
Rhopr-SK qPCR Fwd	AGCCAGCTGAAAGGAGATCA
Rhopr-SK qPCR Rvrs	GGTAAAGAATTGGCCATGGTCT

Supplementary Table S4. Primer sequences utilized to generate double stranded RNA templates of Rhopr-SKR-1, Rhopr-SKR-2, and Rhopr-SK, or the ampicillin resistance gene (ARG) (5’ to 3’).

Rhopr-SKR-1	
T7 Rhopr-SKR-1 Fwd	**TAATACGACTCACTATAGGGAGAGA**AGCTGGTAAAGTACAAATTC
Rhopr-SKR-1 Rvrs	CGAAATCTTTTAGTAAGGATCCA
Rhopr-SKR-1 Fwd	GAAGCTGGTAAAGTACAAATTC
T7 Rhopr-SKR-1 Rvrs	**TAATACGACTCACTATAGGGAGA**CGAAATCTTTTAGTAAGGATCCA
Rhopr-SKR-2	
T7 Rhopr-SKR-2 Fwd	**TAATACGACTCACTATAGGGAGA**TCCAAGCTGTTTCAGTATCAGTAG
Rhopr-SKR-2 Rvrs	GCGAATTCCACACTAAAGACA
Rhopr-SKR-2 Fwd	TCCAAGCTGTTTCAGTATCAGTAG
T7 Rhopr-SKR-2 Rvrs	**TAATACGACTCACTATAGGGAGA**GCGAATTCCACACTAAAGACA
Rhopr-SK (SK peptides)	
T7 Rhopr-SK Fwd	**TAATACGACTCACTATAGGGAGA**ATAATGGGTAGCAGCTTCC
Rhopr-SK Rvrs	GCATACACTCCACTTATAATTCCTCTAATTTAT
Rhopr-SK Fwd	**TAATACGACTCACTATAGGGAGA**GCATACACTCCACTTATAATTCC
T7 Rhopr-SK Rvrs	ATAATGGGTAGCAGCTTCCTAATCAC