

# Supplementary Figure 1 of Seifert et al.

## ApCatSper 1

MSEMDEGDDNNDLSDREKGNANSYLLSLSYHRNVIRNHRKKAGNQPVSR - 50  
AARRQTLVGPQDIIILPSHLKHLQGTGPVGAQDAAQLKKMESMSRVHTFQA - 100  
NTINREDEDEEEKELQARKNKVLRREAGFLRRQLYDLVLESSLFSGFILCVIL - 150  
FNAFMLCALTFVSVQVRAGWHFKFIDYIILLVIYFMECVMKLYVWRLDFFK - 200  
S1  
EQWNVLDLFLIVLCNLADFGIEIFYGGEIQILAILLSIFRAMRALKALRVLR - 250  
S2  
TVRFLRSLQVIMNTCLQSVQSMGAIVMLISLFLYIFAVIGRGLYADIDRA - 300  
S3  
S4  
S5  
RFGNLGSAALTLFQLLTLDDWFYIYTDVAQNPNENFHIIFYLITYIGLEY - 350  
S6  
FIFLNLVFAVLVDNFQLTDAASERDALRKEALKAAEDALFDDGTHTKPI - 400  
DTKSSVSTLKSQANMKVKTLDYDEYDEYTRSDRKYLGHFRLLAAIEQN - 450  
AHIMRNQOGLTLDKVVILVQDTVDDA - 475

## ApCatSper 2

MARNGLEDPKMTSGIFDELAPLAEIFRSKIIEDFHLLSFDDHGHSDAPK - 50  
FYSKDFADEKTLAKMMLDNPHGLVKFQVYSRKDKAENVTRNDRRKNRVRN - 100  
KNSKTPPLDMWAHYILETSYFQNFIMILILSNLSLGLQSEVADRTDPRL - 150  
S1  
AGLRNFLEIFDYCALFLFMVEILLKWLNDNFFLFWNNGWNI FDFVVTVASE - 200  
S2  
S3  
IPEIIASAAGDLTQLRVIVSNIRVFRIFRALKVVSRFRQARMIALAITKA - 250  
S4  
FNAMSFILVFLVFLYIFAITGIIFFEYSRSTRVDLTYQDSFRNLGRAM - 300  
S5  
ITLFLQFLTLDDWYRVLKDMWKMVMSVAPTAYVMLWICIGSFIFRNIFVGI - 350  
S6  
MVNNFQNIRNELFLEVEKQELMRQMQIDAERFNEELERQDQELHTGRHGS - 400  
SLTGLDGVKQVTSIMETIDEEPSSDEEDTEKIQDVQSETKKEGEGEKASK - 450  
HTTSESVRRSDSKMRSRKTVGSSDALFRFRVSRMMGETSRKSDDWEKVVHD - 500  
NLQMLVNSPSETVWPRDTLFRYFQLMEALQENLQERQDLQNLTYHALLNI - 550  
FDS - 553

## ApCatSper 3

MHMLEDKMSSSESLPSLTRQSDVIIDDEGEMKRWIRPDFEFHRFIQRVTE - 50  
SNWFNGVIMFTIIVLNAMVMAVETVDTWKADYRTIFVTFDGLFLGVYTFEF - 100  
S1  
S2  
ILKIYAEPIKYFYSSYNLDFDFVLLISFVOIFISQMOSSGSPNLNLRLL - 150  
S3  
RALRTRLRLRTVSVFKGLQVLVNALIDTFRNSVNLNVLLLLLLMLFLFAIM - 200  
S4  
S5  
GYIFGYKEGTATDHWGDLPSAMLTFLTFVTEGWTDMQEELDKLTQSSR - 250  
P  
IYTIIFIILGHFIFTNVFIGMIIMNIHEATETYRHEQILEREQTIQRKKE - 300  
S6  
YMIRROHEEVROMLEKQSQGDYKDFYDMVKEFQETLRHDDYTISVDLATS - 350  
LTWIEAYITTLDHQDNTMYRLQQLHFEMVNLAMALEKKLKERYGL - 396

## ApCatSper 4

MSDEAERLEEKEKEKEKAEQTTGGSSDEEKPPTRPMGWARRASKQVENAG - 50  
AAFRKIGLKVLANFRNKKKKVVDVDETPrLFTFDPSAVQRGASLCDLF - 100  
ESDQVEEDFNEIVDLDDERVEEVVSQELVGRVLDVSIWFRGMILGVIVLNA - 150  
S1  
ILIGVQTNKELSQKYAWLFFIFDYTVLSIFVCELCLKQWYNGFTIYWKIGW - 200  
S2  
NILDFFIIVILLGPTLKFGLSSRILRLRVLRAFRSLSVSALAGLSVV - 250  
S3  
S4  
S5  
VQTNFQSIPTMNIALLLIIMLVLSVVGVLFGEDFPRLFGNLOSAMFS - 300  
P  
LFICVTDQGWMGLFGRFKDSPHYMTGAVYFIIAIVIGAFVFANLVVAVVV - 350  
S6  
TNLDKAVKEVRHENKMREDVLSTKGITAEELGHDITKEVPITSVDDVMA - 400  
KTDMTTQKPLHFGDFKYLTTTEKFQNYVVLSSALEDNLAEYQTIKADLDKI - 450  
FHLIWELNDVEDEEGEPPSDAPPPMQETVDFQSIGRKGDILSNLLELEQ - 500  
RNLISTRRGS LGGLLKDTARLIPGPSTKQTPTFYQSRFRSRDQDSKEKAA - 550  
GSKPDL SRAGQAGKGGPEAEGKTRSRDLKSPRRDSRRNSSLSPSAQALI - 600  
KHEDESSVSRVP - 611

## ApCatSper δ

MNRVILLVLIIGDFATSSQISPKWSASLFPEDIGOTALRYGRTPLLLSNCA - 50  
GSVHLFLDEYAYLSKNDFITPMAPVSPASVLSVDNPVKTAVVRSDSIV - 100  
FLINGTLLILDTSMNWKRADGVDDYQATTLGN SKFCCDYAWCLEWSDTV - 150  
VTVAAGTMHGADDGNTDQNILILRHTETTFSSLSLPITLQEKQILSALPL - 200  
LPWSAVTLLQEDQDDGPLQHVAFHYVTIFNDDGDSDASVGGYHNVSSI - 250  
RPVSFTLESGDYRVVHLGNRFAEFIVWGPREILYTKSAGQTLKLVSKDGA - 300  
DYLADEFIQELIPGISGDFAFVTQGRWLWGRTCLTSIELVDILLRNSN - 350  
TSSASIFDRHGRGLCTMTSHRYGEEGQSSYGNISLVYLSYCVHPTEVI - 400  
ARLVNDTAPCPVLLLTASFGDEQFYLDTGNTLVLEAAYIPSLWQHITHIMV - 450  
YPSNPNIIRVKTSLLTGAAVGHGLSR IHVSANVSLPADNPDGVDYRGG - 500  
LATVFTTAECSLACQKNPSLEAHIVAGCPPGKSIIRLRKQVTREKCDYLK - 550  
NYVYTFKSDEYDPSFMEGTQGI DE DQPSLSIQYDYGTHGCPDLSYYTDGY - 600  
RPDFDL YMGDELLGPMRADYALIEVHG VHVYQY TMTAKQAGCTRTPQSWV - 650  
EMLGRQAGGPDPRRAWNRNNYMSCIGNEENATV IKERLPYQVMNAGSNNR - 700  
LRWPQIKAIYVFNVTVLEPNYSYCHLRTQFAVEVYGALPASSVSAIKVML - 750  
VTCLMGFAGVAFIFCYMVLQKDAEEEEKQAQKILQFPH - 789

# Supplementary Figure 1 of Seifert et al.

## ApCatSper $\beta$

MEFTITATAASGLLVIMILQSAPATGLKLVNGSRWDVNGTLTGPLVVQEH - 50  
 ELVIYCEVTSNDPNSQSGSETTVSLGHTFVSWGFPVPSITIQNSTWSRTFTF - 100  
 GADSWNVDLGHWKINLPSREFSPSESVNTGEWYGIVEMDVSTGLLREVVV - 150  
 IVDPHREPIQILREFPLSEPSTLR YAAGNVTRLVSSQSPCSSDVTALALI - 200  
 SDTQSQGMIVGLSFEGLKRGSVQWVDLAAALCQNTTNQGC DVERLIDLK - 250  
 TSEYLILLTPNGITSIHLEGERLNQEHITHHDIHQFAESTPLEDCRLAYT - 300  
 PTCNAESLLEDEVI FLVKHTTHPDQIPQVLALSSHPFSSWRSLNLTGAVPI - 350  
 LAVHLAHSRFLILSSKEDRYDVGVRKDLLSSQATP IKPFPTTSLSS - 400  
 AFRPRGACVDTVGYHIFLYGNQMWRSYDSVVFHHLVTLPAGEYVTTTCASS - 450  
 TNHPTTLFLTDAGNIYISKTGVPARIRASESIDLHRPSVLFINHIGDVL - 500  
 VGAVHIDVDSDEEEEGEVQTVTRS IDITKSIQESSHPVDSAITVEHIAAT - 550  
 RFMLQEGGNHNSNQEAGDGISGVARSAVLSETSVGQEIVWSGMHLLITGLR - 600  
 AIGGGTRVAMATSQEASLHANMKSPLIARNVTNLLLQEGPCHHVLT PPHS - 650  
 VAKQPTRYMDIGDVFVFQVSASVYGPMPRHPTRELLSFVSTNPSLLDVQV - 700  
 ARSYDRYGTETATFTVRHRLRNKGISSIVVITSASLLCQRASFTTLTVHC - 750  
 TCPPTKRLHFVYDPLVTAEEFLHGS PKNTKNQSLLTILAVNYRPPSRLGI - 800  
 SIPLTKNIYNADPSQPRLNHDYDASKTSGFYKQCAGKASKQQCGCTDEMR - 850  
 LSSLELFTDCRERVYRNTYTENVYPHLVI RERKGEDRRLAAPYILTVTEL - 900  
 NDREDFVIQAAEVEYLSEIERIVGISGSRLYSPDRMEIFLATQLYHFRL - 950  
 AVIDGFSYCVLEDEFQMYVDRAPLPGLSQMIFATVSVLMGGGVFI IYLN - 1000  
 YFRKTEVHRTRSMALYEQSIK - 1022

## ApCatSper $\gamma$

MECIATCKMCLLHFFIFIMLLVLGRMTVYTCGSSCDWKLDDVVQSVFPYVVE - 50  
 PIVNNREHYAPMDFEADAIWNIPTEAQT LGFPYFIRLEVQCDGVANPVRS - 100  
 SALMSAGSYPKITISYGAQQVWDHSYHTLTDFIFEGALVDMSESECEFELC - 150  
 RPVWLIPLPTDSSYLIVHIRVQTTGIGTLDTAWKFI AFDGYSRLSSSNSS - 200  
 EVDNILGQTVASIDLTVVNGRAFPLQTFPTITSTQAIAGFLENPVLLVS - 250  
 SDFQHFSAIKVRGIESNSTCSLGPAVKEVATFPDRILINTIYGVFEAFG - 300  
 DFSYPSEQSGEMMPGLHHI GLGDCVHHFVLSQQDRQSKQNLLAVSQDKQ - 350  
 RVFRASVEYGITINMEELISSLNTGPCDIVGTSTCSVIDAAVKT SERDTT - 400  
 FVLLTRSGRNTQKYHLRKYTGLPGEYWDTI FDLDANISISKDPHGDP SW - 450  
 YDISLHSREPEQPEASSTSSQLNLTLSGLTFSSYISQHLFLWGSLLHS - 500  
 PSGGQTLQLLLDYSDAAISL FIVGKSSFVFLNMDQEIWYGLDGDKVHL - 550  
 KKL RPSEGWDHMMRLTAQELDPSLNI TTL SLFYDAWGTYEFIAFGNTTH - 600  
 TDYKRRRINYGDVIA YEMFAEAKQEMHQDGHFIGNSTDDYHQYINISPL - 650  
 ADFRCPHYRAIH FETPGKFGFERKEKYS LAAPQLTDGSLGHSEKSLMAYQA - 700  
 IVHLLLERTAQHTIRENELAADTHDPFLQWHREIADQETFNQYLFQTKN - 750  
 LDPGIFINPDSYQLQPFDDVITETSSLPNVIYLDKHDTFNLSVFF EIDL F - 800  
 HLNI EPSDLKVLAEVSDSMLTIEAE LVEYHLNNSVRYEIAIWDKGLLAL - 850  
 QAAPGVDLYPASVLLQVWHSTFTCFEEVE DTLPGGLYTMDVMLGCPPGK - 900  
 KLVFDLKL SIERLEERFIYDCPKKTENRPCIHYEHDFRPLFKVVDFTTGE - 950  
 GSLFTGLYTLTVLGGSSYSEESIKIFTSEERDRYNRQDMFGARIWRPKEE - 1000  
 ESLLNGSIPVYSHLNGISWICQEASPCANI PMHNFPYSPEYFLIEMSN - 1050  
 MGVDAASTYCHYRLQFVVHVHGMDISKMALII VGWVSLVFSILAAGIFML - 1100  
 CNYDNARLWRRCRRCRRTDPLIRVAPMSSESSSEVELEVHYREGLDHRP - 1150  
 IGESTTSTYIERLIMNDEDPPLPSFDINEDQEAGNISSGSRI SNLHHR - 1200  
 SVSGSILHSSLSKDT - 1215