

10 20 30 40 50 60 70 80 90

3HGKNNFDHKFLIGHGVFCKVYKGVLR-DEAKVALKRRRTPF.....SSQGIETETETIETLSTCRHP

3HGKsspS-EETTEE-EEEE-TTS-EEEE-S.....SSHHHHHHHHHHTTT-SS

3S95 PHRIIFRPSDLIFCEVLGKGCFCQAIKIVHRETGEVVMVKELRF.....DEEIQRTFLKEVKVMRCLEHP

3S95sspEEEGGGEEEEEE-SSEEEEEETTT-EEEEEEES.....HHHHHHHHHHHHTTT-TT

FAM69A CNSLIVTEETLYFCKCLSKPKNNOMYLITWDLNLPGVV-KCOMPEALHLDFGTELEPRKEIVLFDKPTR--GTVQKFKEMVYSLFKAKL

FAM69AsspEEEE-----EEEEEE-----EEEE-EE.....EE.....HHHHHHHHHHHHHHH

2PMY -----

ATP binding loop K72 E91

100 110 120 130 140 150 160 170 180

3HGK HT.....VSLICFCDERNEMILIKYMENGNLKRILYGS-

3HGKssp B.....EEEE-GGG--EEEE-TT--SGGGTSSS

3S95 NV.....LKFICVLYKDKRINFIIEYIKGGTLRGLIK

3S95sspEEEEEBTTEEEEE-TT-BHHHHHHH

FAM69A GDQGNLSELVNLILTVADGDKDQVSLCEAKSAWALLQLNEFLLMVILQDKETPKLVGFCDLYVMESEVETSLYGISLPWVIELFIPS

FAM69AsspHHEEEEE-HHHE-EEEEEE

2PMY -----RPADAEAVFORLDADRDCAITFCFARCLG

EF hand

190 200 210 220 230 240 250 260 270

3HGK LPTM--SMSEQRLEICIGARGLHYLHT--RAIITHRDVKSINILLDENFVPKITDFGTSKKGTELGQTHLSIVVKGLGLYIDP

3HGKsspSS-SHHHHHHHHHHHHHHHHHHHT--TEE-S-GGG-B-TT-B-B-TT-EE-SSTT-B-B-TTTS-HHH

3S95 SMDS-QYFWSQRVSAFKDIASGMAI-LHSMNIIHRDLNNSHCLVRENKVVVADFGLARLMV--YTVVENPYWMAF

3S95sspTTS-HHHHHHHHH-HHHHHHHHHH-TTEE-S-SITSEEE-TTS-EEE-TT-EE-S-GGG-HHHHT

FAM69A GFRRSMDQLFTP-SWPRKAKIAIGLEFVEDVFGPGYGNFLMCDTSAKNLGYNDKYDLKMVDMRKI.....VPE

FAM69AsspH-HHHHHHHHHHHHHHHHHHHH-EEEEEE-----EEE-----EEEEEE.....HHH

2PMY -----

D N D

280 290 300 310 320 330 340 350 360

3HGK EYFIKGRITEKSDVYSFGVVLFEVLICARSAIVQSLPREMVNLAEWAVESHNNGCLEQIVDPNLADKIRPESLRFKGDFAVKCLALSSDR

3HGKsspHHH-B-STHHHHHHHHHHH-TTSB-SSSSS-BHHHHHHHHHHTT-SSSS-S-TT-S-HHHHHHHHHHHHHT-SSGGGS-HHHH

3S95 EMINGRSDEKVDVFSFGIVLCEIIGRVNADDPYLPRTMDFGLNVRGF-LDRYCPNC-----PPSFFFITVRCCDLDE

3S95sspT-HHHHHHHHHHHHHH-HHHT-SSTTTS-B-TTSSB-HHHHHHHH-T-TT-TT-HHHHHHHHT-SSGGGS-

FAM69A TNLKELIKDRFCSDLDQVYGTDCRTSCDOSTMCKTSEVIQPNLAKACQLLKDYLLRGAPS-EIREELEKOLYSICALKVTANOME

FAM69AsspHHHHHHH-----HHHHHHHH-----HHHHHHHHHHHHHHH-----HHH

2PMY -----

370 380

3HGK PSMGDVLRKLEVALRLOE

3HGKsspHHHHHHHHHHH-----

3S95 KRPSFVKLEHWLETLRMH

3S95sspHHHHHHHHHHHHHHH-----

FAM69A HSLILNLLKTLNKKKIS

FAM69AsspHHHHHHHHHHHHHHH-----

2PMY -----