

(A) H^+/K^+ -ATPase β subunit

HKB-F → HKB-qF →
atggccgccttgaaaggagaaaggacctgtgggcagcgatgtgaagactttggccgtttt 60
M A A L K E K R T C G Q R C E D F G R F 20
gtctggaactcagacaatgggacatttatggggaggacaccagtgaaatgggtgtacatc 120
V W N S D N G T F M G R T P V K W V Y I 40
← HKB-qR
agcctgtattacttggcgttctacgtggatgatgacgggcctttttgtttggccatctat 180
S L Y Y L A F Y V V M T G L F C L A I Y 60
gtgctcatgtacaccttggatccgtacgcgcctgactaccaagaccggctaaaatcgcca 240
V L M Y T L D P Y A P D Y Q D R L K S P 80
▼
gggtgatgggtgtggccggacacttatggagaggagaaagttaaactcaactacaacaca 300
G V M V W P D T Y G E E K V E I N Y **N** T 100
tcagacaagtgcagctggatgaagatgaccaacatccttaataagttcctggagccctat 360
S D K C S W M K M T N I L N K F L E P Y 120
aatgacactgcacaacacgaatgttacaaccataactgcaccaagggaaagtactacatc 420
N D T A Q H E C Y N H **N** **C** T K G K Y Y I 140
cagaacaccttctctgccctgaccacacaaagtgggcatgttccttcacaaaagcatg 480
Q N T F S A P D H T K W A **C** S F T K S M 160
ctgggaccctgctcaggacacgaggaccgacctttggctacaactgcagcatgccgtgt 540
L G P **C** S G H E D P T F G Y **N** C S M P **C** 180
gtcgtgattaagatgaacaggatcatcaactttttgccaactaatgaaactgagcctccc 600
V V I K M N R I I N F L P T **N** E T E P P 200
ccatatgtcaactgtacgatactggaaggacatgacaatgtggacaaaatggagtatttc 660
P Y V **N** **C** T I L E G H D N V D K M E Y F 220
cctgaaggggggattatggatcgctcctactttccttattatggaaaacaggcacagcct 720
P E G G I M D R S Y F P Y Y G K Q A Q P 240
atgtatgtcaaccggttgggtggccgttcgtttccacctggcggagagaggtcggccaag 780
M Y V N P L V A V R F H L V G E R S A K 260
atccagtgcagagtggctctcccaccagatcagctacaaaactaccacgaccctacgag 840
I Q **C** R V V S H Q I S Y Q N Y H D P Y E 280
← HKB-R
ggaaaagtgcactttccctgaaagcagtgaataa 876
G K V D F S L K A V K - 291

(B) H^+/K^+ -ATPase α subunit

HKA-F →
gtctggactgtgctttgctgggtctcatctcgatgattgaccccccgagagccaccgtacc 61
S G L C F A G L I S M I D P P R A T V P 20

gacgcagtgatgaaatgtcgtactgctggcatccgggtcgtcatggtgactggagaccat 121
D A V M K C R T A G I R V V M V T G D H 40

HKA-qF →
ccaatcacagcgagggcaatcgagccaatggtggcatcatctcgaaggcagtgaaaca 181
P I T A R A I A A N V G I I S E G S E T 60

HKA-qR ←
gtggaagatatcgcccagaggaagcgcattcctgtggaacaagtcaacaagaggagcgc 241
V E D I A Q R K R I P V E Q V N K R D A 80

HKA-qR ←
cgtgcttgtgtgatcagcgggtggtcagctgaaagacatgagcagtgaggagttggatgac 301
R A C V I S G G Q L K D M S S E E L D D 100

gcccctgaggaaccacccccgagatggtgtttgcaagaacctcacctcagcagaaactgatc 361
A L R N H P E M V F A R T S P Q Q K L I 120

attgtggagagctgtcagcgtctggctccatcgtcgctgttacaggtgatggagtgaac 421
I V E S C Q R L G S I V A V T G Ⓣ G V N 140

gactcgccggctctcaagaaggccgacattggcattgccatggggatcgccggttcagat 481
Ⓣ S P A L K K A D I G I A M G I A G S D 160

gctgccaagaacgctgctgacatgatcctggttgacgacaacttcgcttccatcgtcacc 541
A A K N A A D M I L L D D N F A S I V T 180

ggagtggagcagggccgtcttatctttgacaacctgaagaagtctatcgctacacgctg 601
G V E Q G R L I F D N L K K S I A Y T L 200

acaaaaatattccggagctgactccatgtctggtctacatcacgctcagcgtgcctctt 661
T K N I P E L T P C L V Y I T V S V P L 220

cctctcggtgcatcaactatcctcttcatcgaactggccaactgacatctaccctctgtc 721
P L G C I T I L F I E L A T D I Y P S V 240

tctctggcctatgagaaagcagagagtgacatcatgaacctgaagcccaggaaccctcgt 781
S L A Y E K A E S D I M N L K P R N P R 260

cgtgataggctggtaaaccgaaccctggctgctactcgtactttcagataggagccatc 841
R D R L V N E P L A A Y S Y F Q I G A I 280

HKA-R ←
cagtcttttgtaggttttacagattatttctcagcgatggcccaggagggtggttcccg 901
Q S F A G F T D Y F S A M A Q E G W F P 300

ctgttgtgcg 911
L L C 303

(C) Pepsinogen A2:

PepA2-F →
atgaagtggctcgttgttctctctctgccccttggtgctttctccgagtgcctccataggatc 60
M K W L V V L S A L V A F S E C L H R I 20
cccctgatcaaggggaagactgccaggcaagacctgcaggagaaaggactatgggaggag 120
P L I K G K T A R Q D L Q E K G L W E E 40
tacaggaaacagcaccatatacaaccaatggccaagttcatccagagtggaactgagtcc 180
Y R K Q H P Y N P M A K F I Q S G T E S 60
atgactaatgatgctgacttgtcctactatggtgtgatctccatcggcaccctcctcag 240
M T N D A D L S Y Y G V I S I G T P P Q 80
tccttcaccgtcatctttgacacgggctcctccaacctgtgggtcccctccatctactgc 300
S F T V I F D T G S S N L W V P S I Y C 100
tccagccaggcctgtgacaaccacaagaaattcatccccagcagtcctccaccttcaa 360
S S Q A C D N H K K F I P Q Q S S T F K 120
tggggcagccagcctctgtccatccagatggcactggcagcatgactggacgtctggcc 420
W G S Q P L S I Q Y G T G S M T G R L A 140
actgacactggttgaggtgggcgccctcactgtgaccaatcaggtgtttggaatcagccag 480
T D T V E V G G L T V T N Q V F G I S Q 160
acagaggctccccttcatggcccacatgaaggctgatggcatcctgggtctggccttccag 540
T E A P F M A H M K A D G I L G L A F Q 180
accatcgcttcggacaacgtcgtgcccgtcttcgataacatgatcagtcagaaccttgtg 600
T I A S D N V V P V F D N M I S Q N L V 200
tcccagcccattgttctccgtctacctgagcagcaaaagtcagcaggaagtgggtggtc 660
S Q P M F S V Y L S S K S Q Q G S E V V 220
PepA2-qF →
ttcgggtggttacgatgcccaaccacttcactgggtcaaatcagctggatccctctgacctct 720
F G G Y D A N H F T G Q I S W I P L T S 240
gccaacctattggcagatcaagatggacagtgttaccatcaacggacagaccgtggcctgc 780
A T Y W Q I K M D S V T I N G Q T V A C 260
PepA2-qR ←
tccggangctgccaggccatcatcgacaccggcaactccctgatcgctggcccatgcagtc 840
S G X C Q A I I D T G T S L I A G P S S 280
gacatcagcaacatgaattcctgggttgagcctcaaccaaccagtacggagaggctaca 900
D I S N M N S W V G A S T N Q Y G E A T 300
gtgaactgccagaacatccagagcatgctgatgtcaccttactctcgatggaaaggcc 960
V N C Q N I Q S M P D V T F T L D G K A 320
ttcaccatccccgatctgcctacgtctctcagagctactatggttgagcactggcttt 1020
F T I P A S A Y V S Q S Y Y G C S T G F 340
ggtcaggggtgctctaacctctggatcctgggagacgtcttcatcagggagtactacgcc 1080
G Q G G S N L W I L G D V F I R E Y Y A 360
PepA2-R ←
gtctttgatgccccatccaagtaattggctctggccaagtccgtgtaa 1128
V F D A P S K Y I G L A K S V - 375

(D) Na^+/K^+ -ATPase α subunit

NaKA-F / NaKA-qF →
ctgaaggcaacgagactgtgaggacatcgctgcccgcctgaacgtcccagtgtcagaggtc 62
E G N E T V E D I A A R L N V P V S E V 20

aacccaaggatgccaaggcctgcgtcgtgcacggcggcgagctgaaagaaatgaccgag 122
N P R D A K A C V V H G G E L K E M T E 40

gagcacctcgacgatatcctgaagtaccacaccgagatcgtcttcgccagaacctcg 182
E H L D D I L K Y H T E I V F A R T S P 60

cagcagaagctgattattgtggagggttgccagagacagggcgccatcgaggccgtgaca 242
Q Q K L I I V E G C Q R Q G A I V A V T 80

ggtgacggcgtgaacgactctcctgctcttaaaaaggccgacatcggcgttgccatgggc 302
G **D** G V N **D** S P A L K K A D I G V A M G 100

atcgctggatctgacgtctccaagcaggccgctgacatgatcctgctggacgacaacttt 362
I A G S D V S K Q A A D M I L L D D N F 120

gcctccatcgttaccggcgtggaagaaggctcgtctgatctttgacaacttgaagaagtcc 422
A S I V T G V E E G R L I F D N L K K S 140

atcgctacactctgaccagtaacatccccgagatctcacccttcctcttcttcatcatc 482
I A Y T L T S N I P E I S P F L F F I I 160

gccaacatccctctgcccctgggaaccgtcaccatcctctgtatcgacctgggaaccgac 542
A N I P L P L G T V T I L C I D L G T D 180

atggtccctgccatctccctggcttatgaagaagccgagagcgacatcatgaagaggcag 602
M V P A I S L A Y E E A E S D I M K R Q 200

cccagaaacccccaaaacggacaaaactggtgaacgagaggctcatcagcatcgacctacgga 662
P R N P K T D K L V N E R L I S I A Y G 220

cagatcgggtatgatgcaggccacagctggcttcttcacatatttcgtcatcc 714
Q I G M M Q A T A G F F T Y F V I 237

← NaKA-qR
← NaKA-R