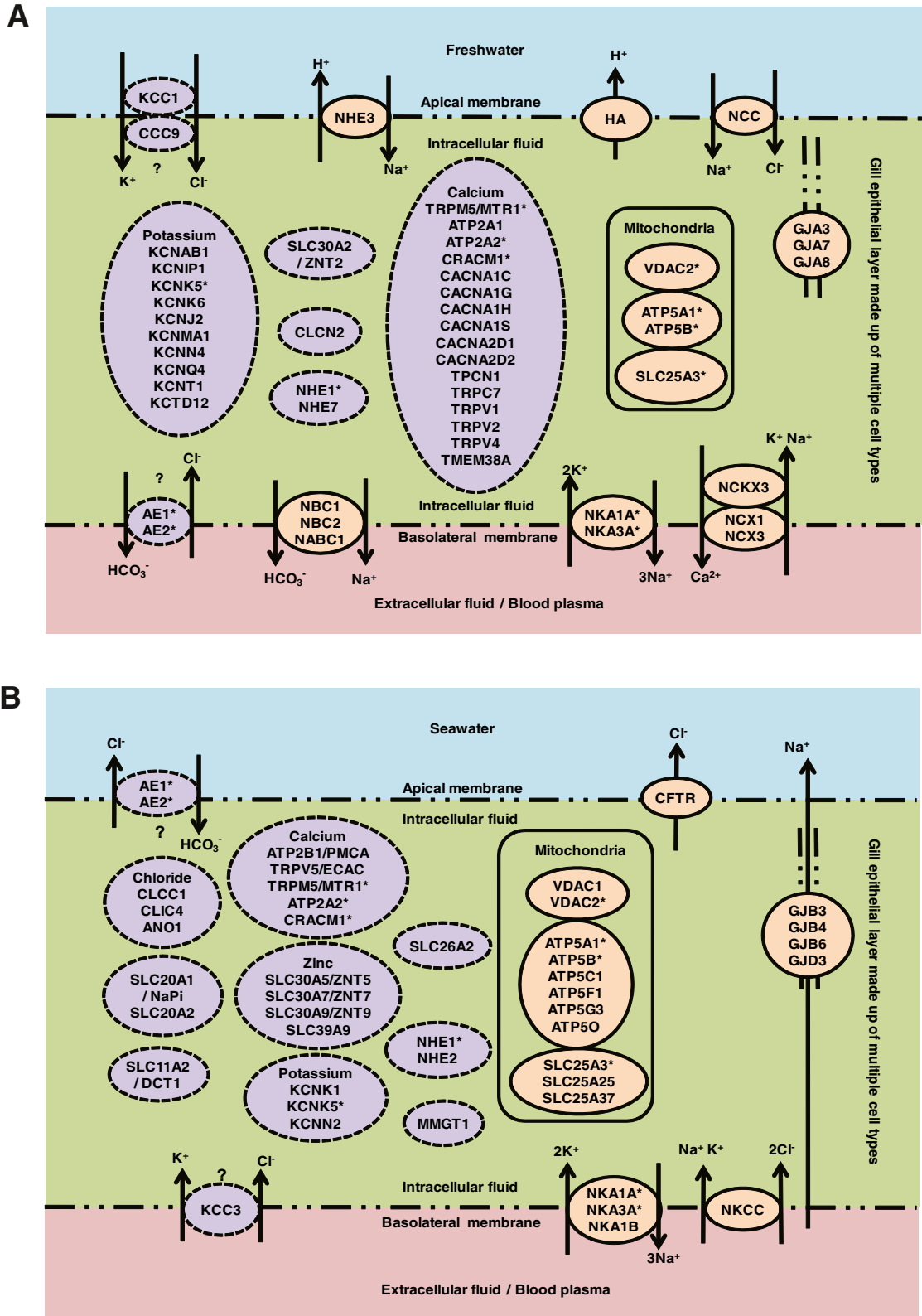
A
Freshwater
Apical membrane
Intracellular fluid
Basolateral membrane
Extracellular fluid / Blood plasma
KCC1
CCC9
K+
?
Cl-
H+
NHE3
Na+
HA
NCC
Potassium
KCNAB1
KCNIP1
KCNK5*
KCNK6
KCNJ2
KCNMA1
KCNN4
KCNQ4
KCNT1
KCTD12
SLC30A2
/ ZNT2
CLCN2
NHE1*
NHE7
Calcium
TRPM5/MTR1*
ATP2A1
ATP2A2*
CRACM1*
CACNA1C
CACNA1G
CACNA1H
CACNA1S
CACNA2D1
CACNA2D2
TPCN1
TRPC7
TRPV1
TRPV2
TRPV4
TMEM38A
Mitochondria
VDAC2*
ATP5A1*
ATP5B*
SLC25A3*
GJA3
GJA7
GJA8
Gill epithelial layer made up of multiple cell types
AE1*
AE2*
HCO3-
NBC1
NBC2
NABC1
2K+
NKA1A*
NKA3A*
3Na+
K+ Na+
NCKX3
NCX1
NCX3
Ca2+
B
Seawater
Apical membrane
Intracellular fluid
Basolateral membrane
Extracellular fluid / Blood plasma
Cl-
AE1*
AE2*
?
HCO3-
CFTR
Na+
Chloride
CLCC1
CLIC4
ANO1
Calcium
ATP2B1/PMCA
TRPV5/ECAC
TRPM5/MTR1*
ATP2A2*
CRACM1*
SLC26A2
SLC20A1
/ NaPi
SLC20A2
Zinc
SLC30A5/ZNT5
SLC30A7/ZNT7
SLC30A9/ZNT9
SLC39A9
NHE1*
NHE2
SLC11A2
/ DCT1
Potassium
KCNK1
KCNK5*
KCNN2
MMGT1
Mitochondria
VDAC1
VDAC2*
ATP5A1*
ATP5B*
ATP5C1
ATP5F1
ATP5G3
ATP5O
SLC25A3*
SLC25A25
SLC25A37
GJB3
GJB4
GJB6
GJD3
Gill epithelial layer made up of multiple cell types
K+
KCC3
2K+
NKA1A*
NKA3A*
NKA1B
3Na+
Na+ K+
2Cl-
NKCC