

Cytosol

Membrane

Lumen

GCS90

M T G A S **R R** S A **R** G **R** I K S S S L (32aa) L K-

TMD



R/A GCS90

M T G A S **A A** S A **A** G **A** I K S S S L (32aa) L K-

TMD



R/L GCS90

M T G A S **L L** S A **L** G **L** I K S S S L (32aa) L K-

TMD



A

GCS90

B

mRFP-HDEL
merged

C

ST-mRFP
merged

D

R/AGCS90

E

mRFP-HDEL
merged

F

ST-mRFP
merged

G

R/LGCS90

H

mRFP-HDEL
merged

I

ST-mRFP
merged