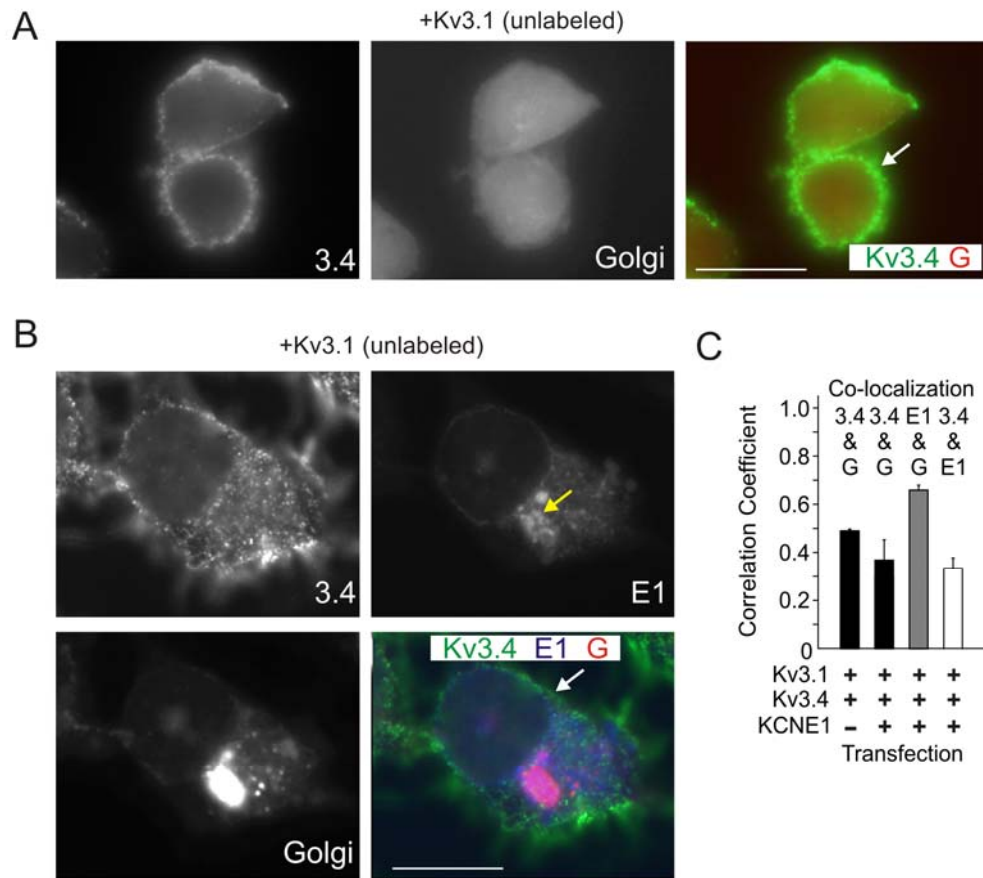# KCNE1 and KCNE2 Provide a Checkpoint Governing Voltage-Gated Potassium Channel α-Subunit Composition

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Supporting Material

Supplementary Figure 1. Kv3.1 and Kv3.4 form a bipartite surface-expressed complex lacking KCNE1

A. Immunofluorescence analysis of CHO cells transfected with cDNA encoding Kv3.1 (unlabeled), Kv3.4 (green), and a fluorescent Golgi marker (red). Scale bars: 5 μm. Representative images, taken from at least 5 images per group, are shown. Single-wavelength images are shown in monochrome for clarity; the double-wavelength, merged image is shown in color. White arrow: Kv3.4 at the cell surface (green).

B. Immunofluorescence analysis of CHO cells transfected with cDNA encoding Kv3.1 (unlabeled), Kv3.4 (green), rat KCNE1-HA (blue), and a fluorescent Golgi marker (red). Scale bars: 5 μm. Representative images, taken from at least 5 images per group, are shown. Single-wavelength images are shown in monochrome for clarity; the triple-wavelength, merged image is shown in color. Yellow arrow: KCNE1 in the Golgi; white arrow: Kv3.4 at the cell surface (green).

C. Quantification of co-localization from images as in panels A and B using Pearson's correlation coefficient, $n = 5$ cells per group.
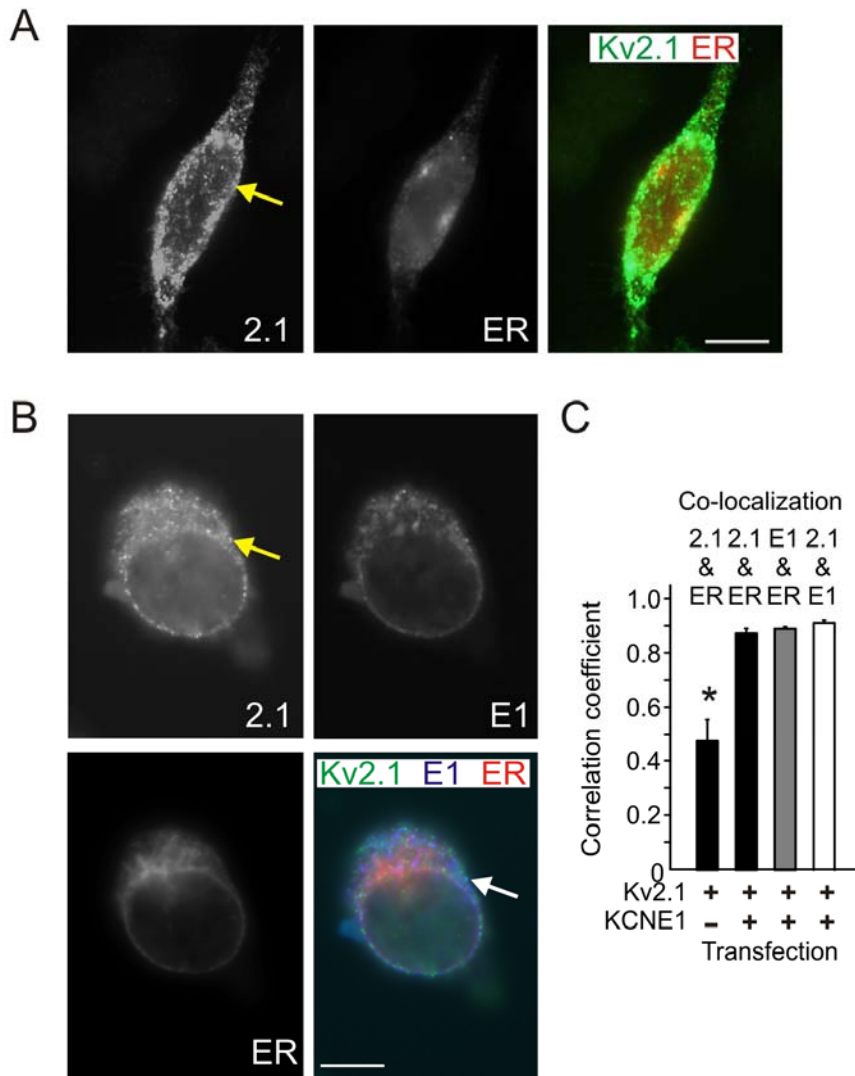
Supplementary Figure 2. KCNE1 impairs Kv2.1 surface expression, but also localizes with Kv2.1 at the cell surface

A. Immunofluorescence analysis of CHO cells transfected with cDNA encoding Kv2.1 (green) and a fluorescent ER marker (red). Scale bars: 5 µm. Representative images, taken from at least 6 images per group, are shown. Single-wavelength images are shown in monochrome for clarity; the double-wavelength, merged image is shown in color. Yellow arrow: Kv2.1 at the cell surface.

B. Immunofluorescence analysis of CHO cells transfected with cDNA encoding Kv2.1 (green), rat KCNE1-HA (blue), and a fluorescent ER marker (red). Scale bars: 5.5 µm. Representative images, taken from at least 6 images per group, are shown. Single-wavelength images are shown in monochrome for clarity; the triple-wavelength, merged image is shown in color. Yellow arrow: Kv2.1 in a punctuate pattern at the cell surface; white arrow: same region, showing Kv2.1-KCNE1 co-localization in a punctuate pattern at the cell surface (aquamarine).

C. Quantification of co-localization from images as in panels A and B using Pearson's correlation coefficient, $n = 6\text{-}11$ cells per group, $^{*}p < 0.05$.