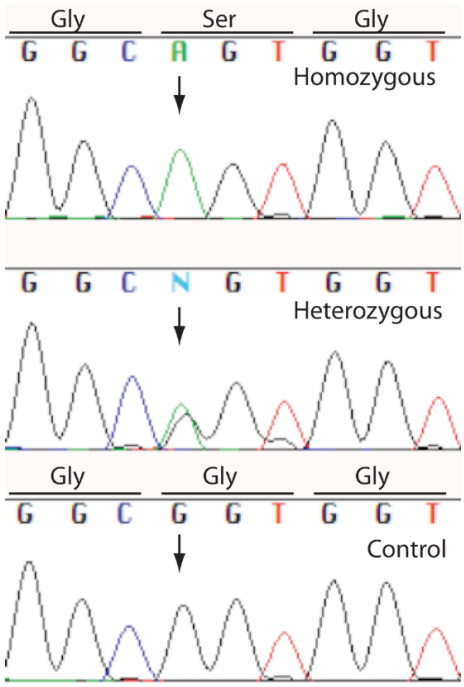
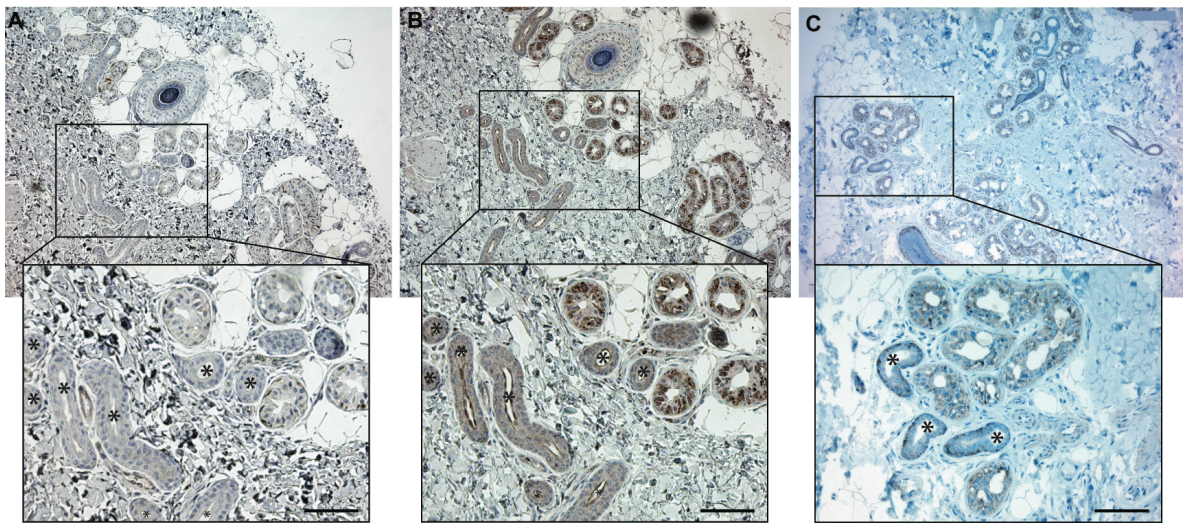
Supplementary figures and legends

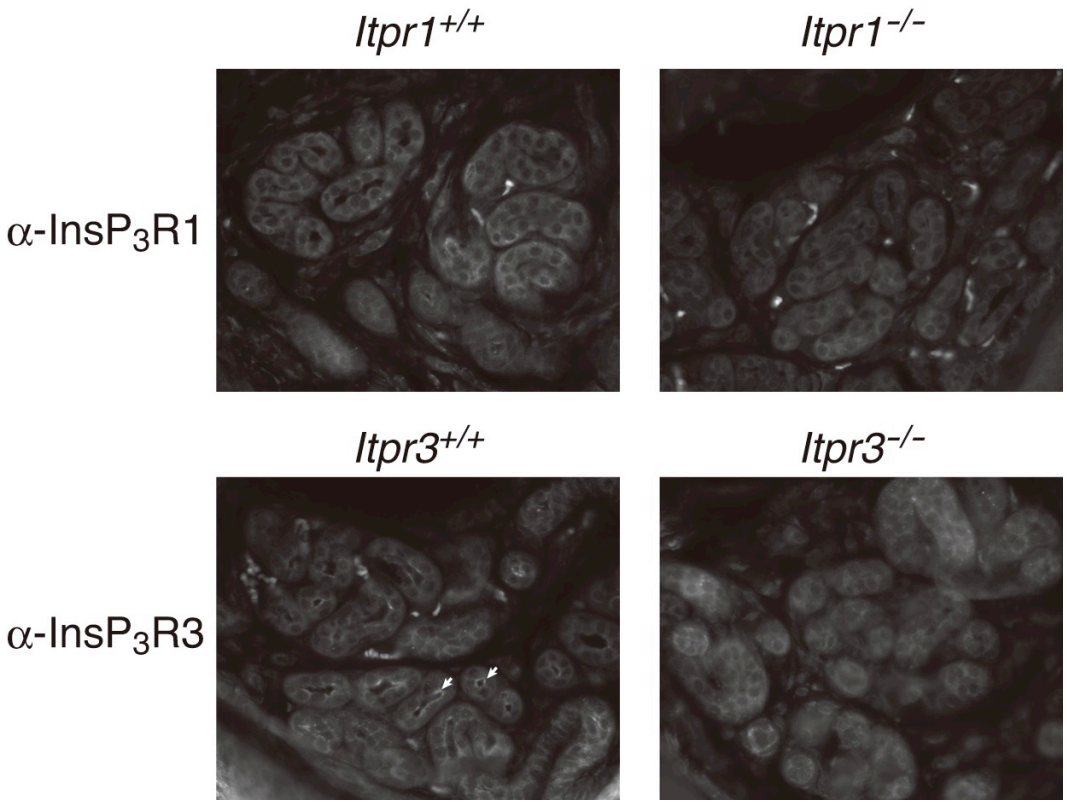


Supplementary Figure 1. Chromatograms illustrating the *ITPR2* gene mutation c.7492G>A (arrows) in an affected homozygous individual (top) and a heterozygous parent (middle). The w.t. sequence of a normal control individual is shown at the bottom. The corresponding codons are indicated above each chromatogram.



Supplemenary Figure 2. Immunoreactivity for $InsP_3R1$, $InsP_3R2$ and $InsP_3R3$ in normal human eccrine sweat glands. (**A**) $InsP_3R1$ is not detectable in the sweat glands (box enlarged). (**B**) $InsP_3R2$ is predominantly expressed in the secretory portion (box

enlarged) with some staining in the excretory ducts (*) showing a concentration in subcellular regions lining the ducts. (**C**) $InsP_3R3$ show strong staining of the basal ductal (peripheral) cell layer of the excretory duct (*), and a weaker staining in cells of the secretory part (box enlarged). Stain: Polyclonal Rabbit anti-human $InsP_3R1$ 1:1000 (HPA 016487, Sigma), Polyclonal rabbit anti-human $InsP_3R2$ 1:1000 (AB9074, Millipore) and Polyclonal rat anti-mouse $InsP_3R3$ 1:500 (LC3, (26)). Original magnification x10. Size bar: 20 μm.



Supplementary Figure 3. Immunohistochemistry of $InsP_3R1$ and $InsP_3R3$ in mouse sweat glands. Upper panel shows the immunohistochemistry of $InsP_3R1$ in *Itpr1*$^{+/+}$ and *Itpr1*$^{-/-}$ mouse sweat glands. Lower panel shows the immunohistochemistry of $InsP_3R3$ in *Itpr3*$^{+/+}$ and *Itpr3*$^{-/-}$ mice. Strong $InsP_3R3$ signals at the apical site of clear cells were sometimes observed (arrows). Stain: Polyclonal rat anti-mouse $InsP_3R1$ (4C11 (28)) and polyclonal rabbit anti-mouse $InsP_3R3$ (LC3 (26)).

Supplementary video 1. The pseudo-colored image of Ca^{2+} signals in mouse sweat glands in response to acetylcholine. The isolated sweat glands from wild-type mice were sequentially stimulated with 30, 100, 300, 1000 nM of acetylcholine.