**Movie S1** (separate file). Typical dual color movie showing IAV (magenta) entry via the CME (CLCa, green) pathway. The movie was recorded at 1 fps and played at 30 fps. Scale bar:  $2 \mu m$ .

**Movie S2** (separate file). Typical dual color movie showing IAV (magenta) entry via the CME (CLCa, green) pathway. The movie was recorded at 1 fps and played at 30 fps. Scale bar: 2 µm.

Movie S3 (separate file). Typical tri-color movie showing the colocalization of IAV (magenta), CLCa (cyan), and OlyA (green). The movie was recorded at 0.5 fps and played at 20 fps. Scale bar:  $2 \mu m$ .

**Movie S4** (separate file). Typical tri-color movie showing the colocalization of IAV (magenta), CLCa (cyan), and FBP17 (green). The movie was recorded at 0.5 fps and played at 30 fps. Scale bar: 2 µm.