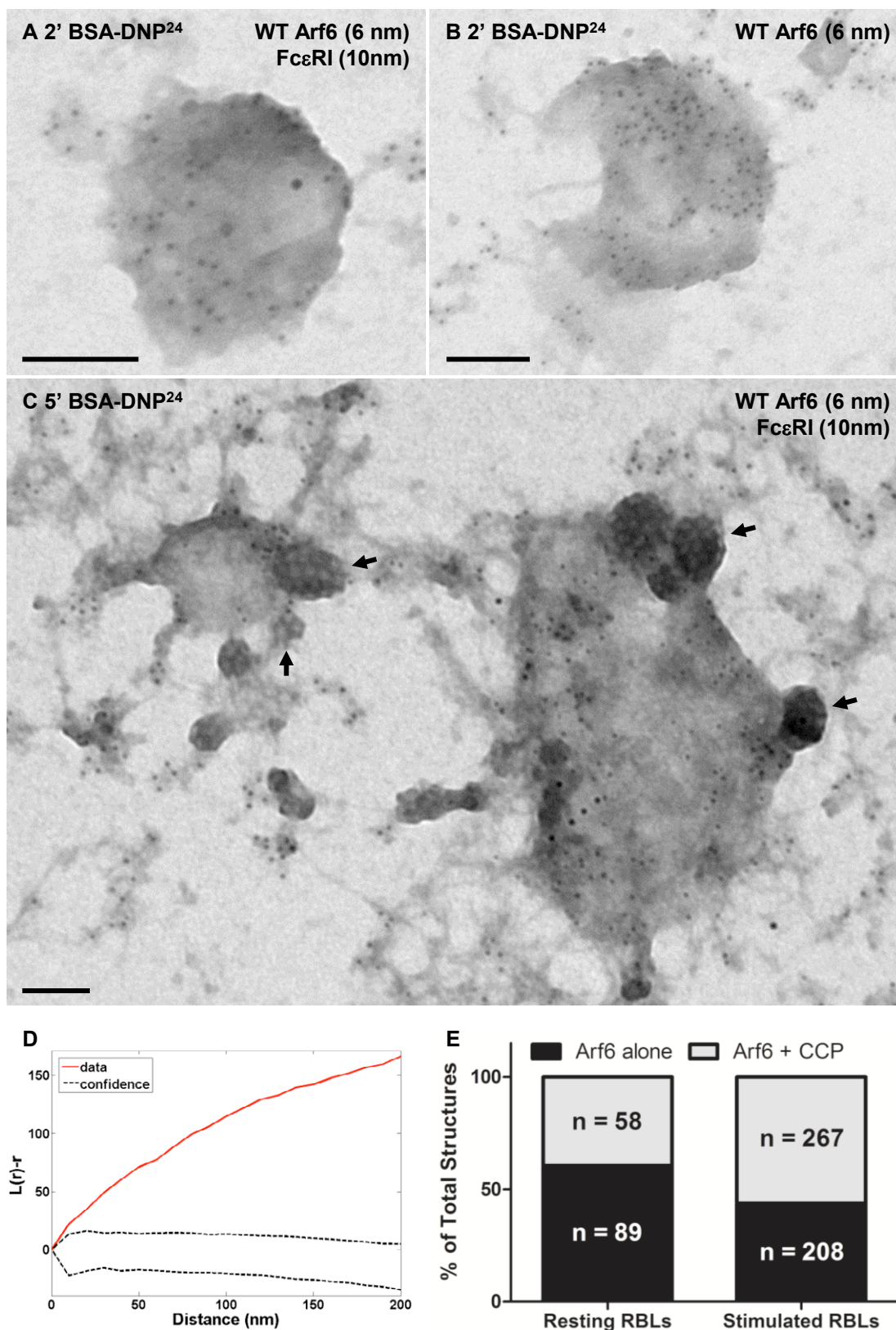
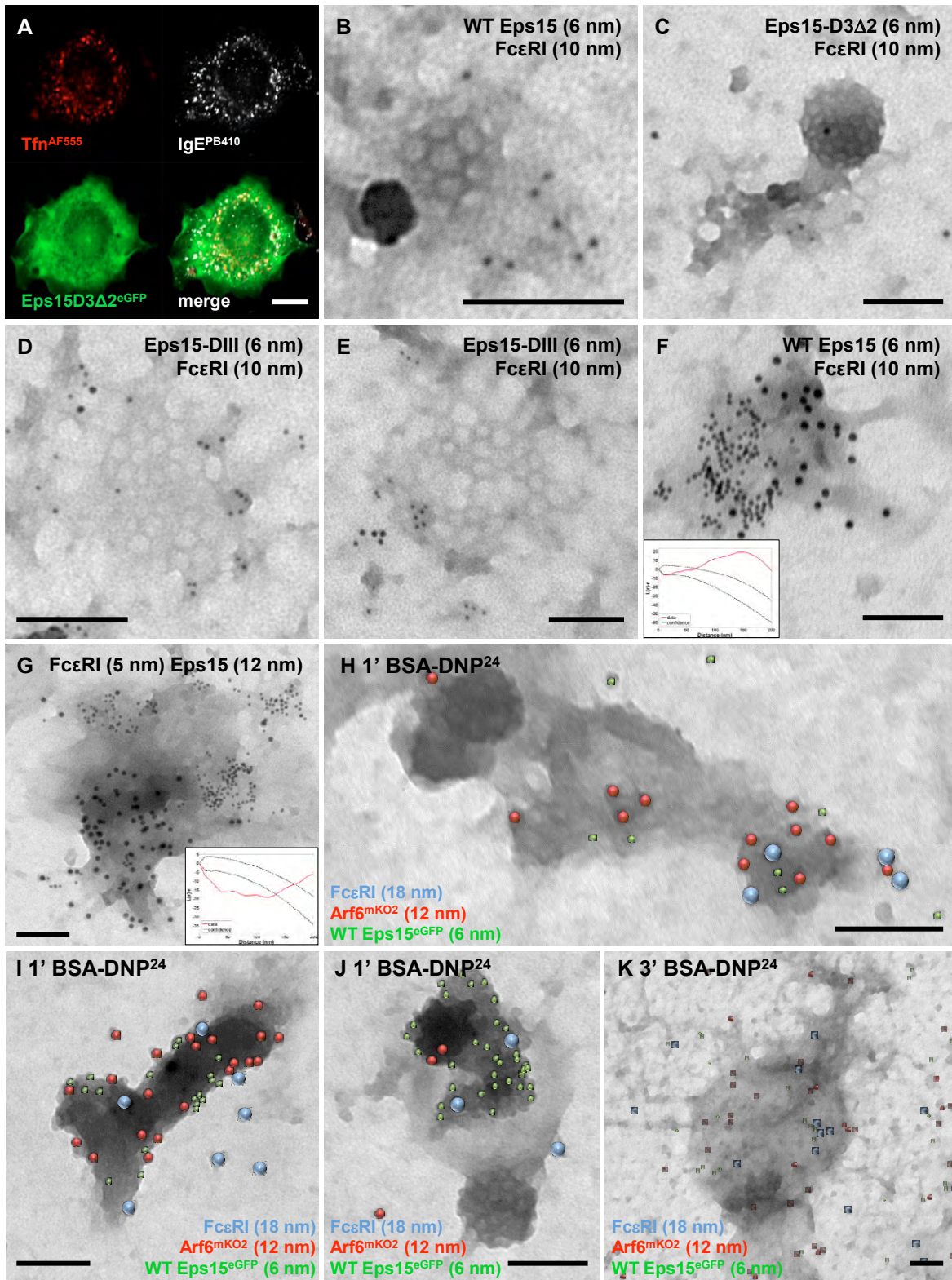


**Fig. S1. Expression of mutant Arf6 alter Fc  $\epsilon$  RI internalization but not IgE binding.** RBL cells transiently transfected with WT Arf6<sup>CFP</sup> (A,C) or Arf6-Q67L<sup>CFP</sup> (B,D) were primed with IgE<sup>AF555</sup> and crosslinked (C-D), or not (A-B), with DNP<sup>24</sup> for 10' at 37°C before fixation and imaging. Scale bars = 10  $\mu$  m.

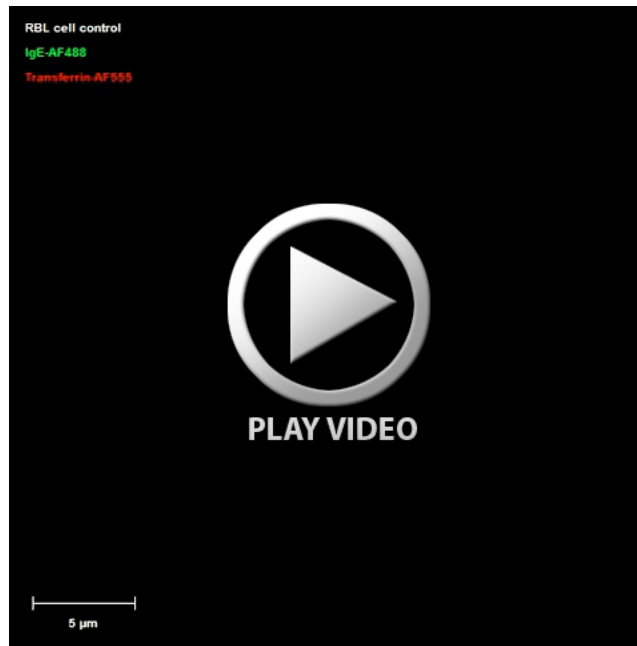


**Fig. S2. Arf6 positive structures are often with/connected to CCP.** (A-C) TEM image of membrane sheets prepared from cells expressing WT Arf6<sup>CFP</sup> (6 nm gold). Samples were primed with IgE and stimulated for 2' (A-B) or 5' (C) with DNP-gold (10 nm gold). (D) Ripley's bivariate statistical co-clustering test corresponding to images (C). (E) Quantification of Arf6 structures alone or connected to a CCP in resting or stimulated RBLs. Scale bars = 100 nm (A-C).



**Fig. S3. Expression of a dominant negative Eps15 increase the occurrence of flat clathrin coated pits.** (A) Confocal image of RBL cells transiently transfected with Eps15 D3 Δ 2<sup>eGFP</sup> primed with IgE<sup>PB410</sup> and stimulated with DNP<sup>24</sup> and tfn<sup>AF555</sup> (Invitrogen) for 10' at 37°C. (B-G) Electron micrograph of RBL-2H3 cells expressing WT Eps15<sup>eGFP</sup> (B,F-G), Eps15 D3 Δ 2<sup>eGFP</sup> (C) or Eps15 DIII<sup>eGFP</sup> (D-E) (6 nm gold); primed with IgE and stimulated with DNP-gold before imaging. Inset graph on images F and G are Ripley's bivariate statistical co-clustering test for Eps15 and Fc ε RI. (H-K) Electron micrographs of membrane sheets triply labelled for WT Eps15<sup>eGFP</sup> (6 nm gold, green dots), Arf6<sup>mKO2</sup> (12 nm gold, red dots) and Fc ε RIβ (18 nm gold, blue dots) after 1' (H-J) or 3' (K) stimulation at 37°C. Scale bars = 10 μm (A) or 100 nm (B-K).

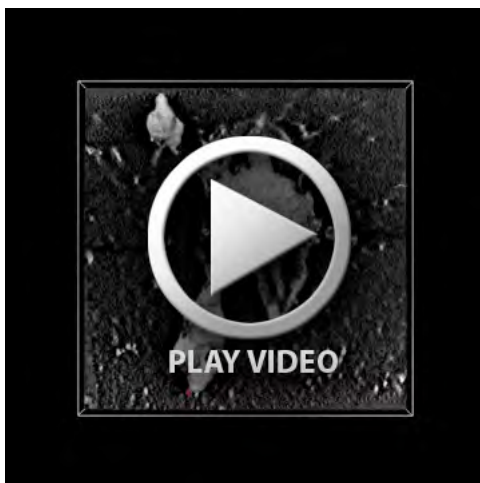




**Movie 1.** Z-slices throughout a RBL cells (showed in Fig. 1G) primed with IgE<sup>AF488</sup> and stimulated with DNP<sup>24</sup> and tfn<sup>AF555</sup> (Invitrogen) for 10' at 37°C, showing the complete internalization of both transferrin and IgE receptors. Scale bar = 5 μm.



**Movie 2.** Z-slices throughout a RBL cells (showed in Fig. 1H) primed with IgE<sup>AF488</sup> and stimulated with DNP<sup>24</sup> and tfn<sup>AF555</sup> (Invitrogen) for 10' at 37°C, beforehand treated with siRNA anti-clathrin HC, showing the complete internalization of the IgE receptors while transferrin stays on the cell surface. Scale bar = 5 μm.



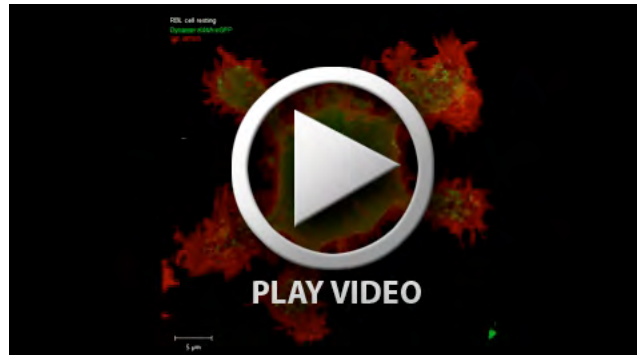
**Movie 3 and 4.** 3D EM reconstructions of the Arf6 structures observed in Figure 3D and G.



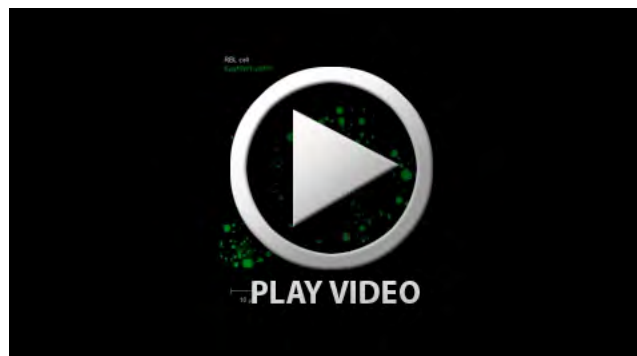
**Movie 5.** 3D EM reconstruction of a clathrin coated pit with WT Dynamin gold labels present at the neck of the vesicle.



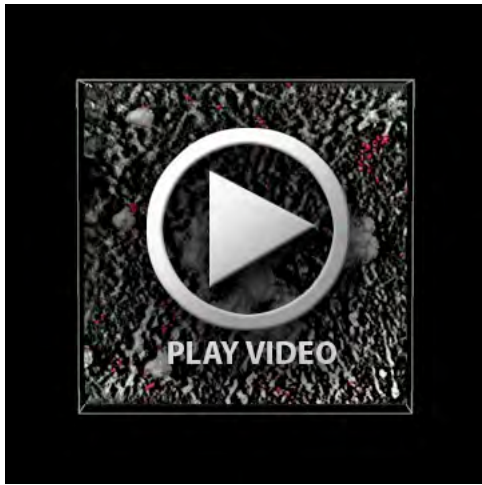
**Movie 6.** Z-stack maximum intensity projection of a RBL cell stably expressing WT Dynamin<sup>eGFP</sup> and primed with IgE<sup>AF555</sup> showing a diffuse and homogeneous distribution of WT Dynamin<sup>eGFP</sup>. Scale bar = 5  $\mu$  m.



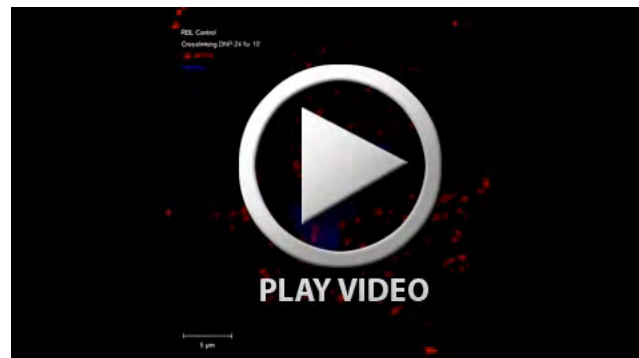
**Movie 7.** Z-stack maximum intensity projection of a RBL cell stably expressing Dynamin-K44A<sup>eGFP</sup> and primed with IgE<sup>AF555</sup>, showing the presence of Dynamin-K44A<sup>eGFP</sup> in punctate structures near the cell surface. Scale bar = 5  $\mu$  m.



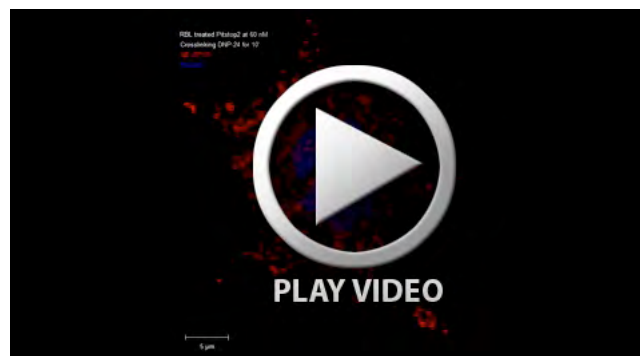
**Movie 8.** Z-stack maximum intensity projection of a RBL cell transiently expressing WT Eps15<sup>eGFP</sup> showing the accumulation of bright Eps15 structures connected, or next, to the plasma membrane. Scale bar = 10  $\mu$  m.



**Movie 9 and 10.** 3D EM reconstructions of the Eps15 structures observed in Figure 7A and D.



**Movie 11.** Z-stack maximum intensity projection of the RBL cell presented in Figure 8G, showing a high degree of Fc  $\epsilon$  RI internalization after crosslinking with DNP<sup>24</sup>-BSA Scale bar = 5  $\mu$  m.



**Movie 12** Z-stack maximum intensity projection of the RBL cell presented in Figure 8I, showing the accumulation of aggregated Fc  $\epsilon$  RI on the cell surface and the absence of internalization upon crosslinking with DNP<sup>24</sup>-BSA after a 30' treatment with Pitstop2 at 60  $\mu$  M. Scale bar = 5  $\mu$  m.