

1 **Supplemental Figure Legends**

2 **Fig. S1.** Ciliary localization of FKBP- β arr2-GFP is greater in response to somatostatin treatment
3 than rapamycin treatment. Representative images of IMCD cells transfected with (A-I) FKBP
4 fused to GFP (FKBP-GFP; green) or (J-R) FKBP fused to β arr2 and GFP (FKBP- β arr2-GFP;
5 green) and Sstr3 fused to DsRed and FRB (Sstr3-DsRed-FRB; red). Cells were treated with (A-
6 C; J-L) DMSO (Veh), or (D-F; M-O) 100 nM rapamycin (Rap), or (G-I; P-R) 10 μ M
7 somatostatin (SST) for 10 minutes and fixed. Insets correspond to the boxed regions and show
8 side views of the cilia. Nuclei were stained with DRAQ5. Bars, 10 μ m.

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10 **Fig. S2.** Agonist-mediated decreases in endogenous Sstr3 neuronal ciliary localization requires
11 β arr2. Representative images of hippocampal neurons from β arr2 WT (A-B) and β arr2 KO (C-D)
12 mice after 7 days in culture, labeled with antibodies to Sstr3 (green) and AC3 (red). Neurons
13 were either (A, C) treated with vehicle (Veh) or (B, D) treated with 10 μ M somatostatin (SST)
14 for 40 minutes. Insets correspond to the boxed regions and show individual channels to aid
15 visualization. Bars, 10 μ m.

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17 **Movie 1.** β -arrestin 1 is not detected in cilia after somatostatin treatment. Time-lapse imaging of
18 a WT hippocampal neuron expressing β arr1 fused to GFP (green) and Sstr3 fused to DsRed (red)
19 imaged for 10 minutes after treatment with somatostatin. Sstr3-DsRed is targeted to the cilium
20 but β arr1-GFP is not detected in cilia before or after somatostatin treatment. Width of field of
21 view = 90 μ m. Time compression = 200:1.

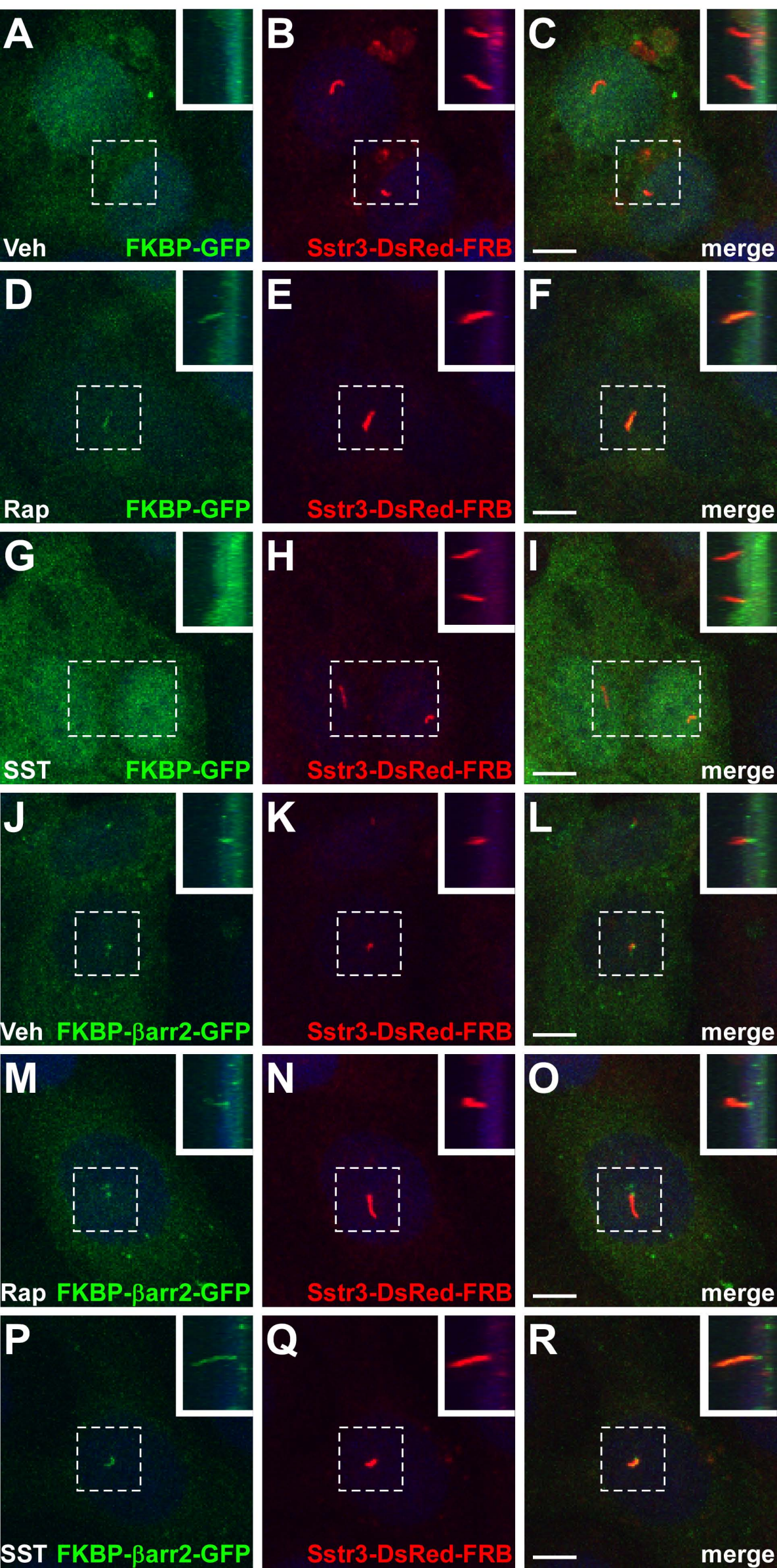
22

23 **Movie 2.** β -arrestin 2 localizes to cilia after somatostatin treatment. Time-lapse imaging of a WT
24 hippocampal neuron expressing β arr2 fused to GFP (green) and Sstr3 fused to DsRed (red)
25 imaged for 10 minutes after treatment with somatostatin. Prior to addition of somatostatin Sstr3-
26 DsRed is targeted to the cilium but β arr2-GFP is not detected in cilia. Within 10 minutes of
27 somatostatin treatment β arr2-GFP localizes throughout the cilium as indicated by overlap with
28 Sstr3-DsRed. Width of field of view = 90 μ m. Time compression = 200:1.

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30 **Movie 3.** The same time-lapse images as in Movie S2 with the red channel turned off to aid
31 visualization of β arr2-GFP ciliary localization. Prior to addition of somatostatin β arr2-GFP
32 (green) is not detected in cilia. Within 10 minutes of somatostatin treatment β arr2-GFP localizes
33 throughout the cilium. Width of field of view = 90 μ m. Time compression = 200:1.

Supplemental Figure 1



Supplemental Figure 2

