

Genotype and Source list

Figure 1. (A) Wild-type : $w^{1118} / Y ; + / + ; + / +$. **(B) NompB:GFP :** $w^{1118} ; NompB:GFP / CyO ; + / +$. **(C) ERGIC-53:GFP :** $w^{1118} ; + / + ; dERGIC53:GFP / dERGIC53:GFP$. **(D) Golgi:GFP :** $w^{1118} ; + / + ; sqh-EYFP:Golgi / sqh-EYFP:Golgi$.

Figure 2. (B) Control : *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; + / +*. **Sec16-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; UAS-Sec16-IR / + ; + / +*. **Sec22-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Sec22-IR / +*. **Sec31-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Sec31-IR / +*. **Syx5-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Syx5-IR / +*. **Sec23-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Sec23-IR / +*.

Figure 3. (A and C) Control : *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; + / +*. **(B and D) ERGIC-53-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; UAS-ERGIC53-IR / + ; + / +*.

Figure 4. (A and B) Grasp65:GFP : *Peb-Gal4, UAS-Dcr2 / Y ; UAS-Grasp65:GFP / + ; + / +*. **(C) Control :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; + / +*. **(D) Grasp65-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Grasp65-IR / +*.

Figure 5. (A and D) Wild-type : $w^{1118} / Y ; + / + ; + / +$.

Figure 6. (C) Wild-type : $w^{1118} / Y ; + / + ; + / +$. **Grasp65^[102] :** $w[*] ; wg[Sp-1] / CyO ; Grasp65^{[102]}$. **GM130^[Δ23] :** $w[*] ; GM130^{[Δ23]} ; TM2/TM6B, Tb[1]$.

Figure S1. (A) Wild-type : $w^{1118} / Y ; + / + ; + / +$. **(B) BBS1:GFP :** $w^{1118} ; BBS1:GFP / BBS1:GFP ; + / +$. **(C) BBS8:GFP :** $w^{1118} ; + / + ; BBS8:GFP / BBS8:GFP$. **(D) Mks1:GFP :** $w^* ; + / + ; Mks1:GFP / Mks1:GFP$. **(E) Cc2d2a:GFP :** $w^* ; + / + ; Cc2d2a:GFP / Cc2d2a:GFP$.

Figure S2. +. (A) ERGIC-53:GFP : $w^{1118} ; + / + ; dERGIC53:GFP / dERGIC53:GFP$. **(B) Golgi:GFP :** $w^{1118} ; + / + ; sqh-EYFP:Golgi / sqh-EYFP:Golgi$.

Figure S3. (A and B) Wild-type : $w^{1118} / Y ; + / + ; + / +$.

Figure S4. (A) Control : *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; + / +*. **Grasp65-IR :** *Peb-Gal4, UAS-Dcr2 / Y ; + / + ; UAS-Grasp65-IR / +*. **(B) Control :** $w^{1118} / Y ; + / + ; Or22a-Gal4 / +$. **Grasp65-IR :** $+ / Y ; + / + ; Or22a-Gal4 / UAS-Grasp65-IR$.

Figure S5. (A) Wild-type : $w^{1118} / Y ; + / + ; + / +$.

Figure S6. (A) Grasp65:GFP : *Peb-Gal4, UAS-Dcr2 / Y ; UAS-Grasp65:GFP / + ; + / +*. **(C) Wild-type :** $w^{1118} / Y ; + / + ; + / +$.

Figure S7. For all lanes: $w^{1118} / Y ; + / + ; + / +$.

Ref. Name	Source, Line#	Figure(s)
<i>NompB:GFP</i>	Donated	<i>1B</i>
<i>ERGIC-53:GFP</i>	VDRC, #318063	<i>1C, S2A</i>
<i>Golgi:GFP</i>	BDSC, #7193	<i>1D, S2B</i>
<i>Sec16-IR</i>	BDSC, #53917	<i>2B</i>
<i>Sec22-IR</i>	BDSC, #34893	<i>2B</i>
<i>Sec31-IR</i>	BDSC, #32878	<i>2B</i>
<i>Syx5-IR</i>	BDSC, #29397	<i>2B</i>
<i>Sec23-IR</i>	BDSC, #32365	<i>2B</i>
<i>ERGIC-53-IR</i>	BDSC, #55657	<i>3B, 3D</i>
<i>Grasp65:GFP</i>	BDSC, #8507	<i>4A, 4B, S6A</i>
<i>Grasp65-IR</i>	BDSC, #34082	<i>4D, S4A, S4B</i>
<i>Or22a-Gal4</i>	BDSC, #9951	<i>S4B</i>
<i>Grasp65^[102]</i>	BDSC, # 65257	<i>6C</i>
<i>GM130^[Δ23]</i>	BDSC, # 65255	<i>6C</i>
<i>BBS1:GFP</i>	VDRC, #318684	<i>S1B</i>
<i>BBS8:GFP</i>	VDRC, #318636	<i>S1C</i>
<i>Mks1:GFP</i>	VDRC, #318529	<i>S1D</i>
<i>Cc2d2a:GFP</i>	Donated	<i>S1E</i>