Appendix Table S1 : Supplementary Information about plasmids and antibodies					
Plasmid constructs		**Primary antibodies**		**Secondary antibodies**	
Plasmid constructs					
Construct names	Vector	Forward Primer	Reverse Primer	Restriction Sites	Comment
GST-Rabl2	pGEX-4T-1	CGCGGATCCATGGCAGGGGACAGAAAC	CGCGTCGACTTAGGAAGGAGATGGGCT	EcoR1/Sal1	To express GST-Rabl2 in E.coli
His-Rabl2	pET-28a	CGCGGATCCATGGCAGGGGACAGAAAC	CGCGTCGACTTAGGAAGGAGATGGGCT	EcoR1/Sal1	To express His-Rabl2 in E.coli
LV-GFP-Rabl2	LV-GFP-C1	TCTCGAGCTCAAGCTTCGATGGCAGGGGACAGAAACAGGCAC	GCGGTACCGTCGACTGCAGATTAGGAAGGAGATGGGCTCTT	EcoR1	lentivirus plasmid of GFP-Rabl2
LV-GFP-Rabl2^{Q80L}	LV-GFP-C1	TGGGATACAGCAGGCCTGGAGCGGTTCCAGAGC	GCTCTGGAACCGCTCCAGGCCTGCTGTATCCCA	EcoR1	lentivirus plasmid of GFP-Rabl2^{Q80L}
LV-GFP-Rabl2^{S35N}	LV-GFP-C1	AGTGCGGTGGGCAAGAACAAACTCATGGAGAGA	TCTCTCCATGAGTTTGTTCTTGCCCACCGCACT	EcoR1	lentivirus plasmid of GFP-Rabl2^{S35N}
LV-GFP-Rabl2^{D73GQ80L}	LV-GFP-C1	CAAGACGATCCTTGTGGGCTTCTGGGATACAGCAG	CTGCTGTATCCCAGAAGCCCACAAGGATCGTCTTG	EcoR1	lentivirus plasmid of GFP-Rabl2^{D73GQ80L}
LV-GFP-Rabl2^{D73G}	LV-GFP-C1	CAAGACGATCCTTGTGGGCTTCTGGGATACAGCAG	CTGCTGTATCCCAGAAGCCCACAAGGATCGTCTTG	EcoR1	entivirus plasmid of GFP-Rabl2^{D73G}
pYr-1.1-GFP-Rabl2	pYr-1.1-GFP	ACAAGTCCGGACTCAGAATGGCAGGGGACAGAAACAGGCA	GCAGAGCGGCCGCGATTAGGAAGGAGATGGGCTCTTGG	Bgl II	to generate the adenovirus plasmid of GFP-Rabl2
pYr-1.1-GFP-Rabl2^{Q80L}	pYr-1.1-GFP	ACAAGTCCGGACTCAGAATGGCAGGGGACAGAAACAGGC	GCAGAGCGGCCGCGATTAGGAAGGAGATGGGCTCTTGG	Bgl II	to generate the adenovirus plasmid of

		A			GFP-Rabl2^{Q80L}
pYr-1.1-GFP-Rabl2^{S35N}	pYr-1.1-GFP	ACAAGTCCGGACTCAGAATGGCAGGGGACAGAAACAGGCA	GCAGAGCGGCCGCGATTAGGAAGGAGATGGGCTCTTGG	Bgl II	to generate the adenovirus plasmid of GFP-Rabl2^{S35N}
pYr-1.1-GFP-Rabl2^{D73GQ80L}	pYr-1.1-GFP	ACAAGTCCGGACTCAGAATGGCAGGGGACAGAAACAGGCA	GCAGAGCGGCCGCGATTAGGAAGGAGATGGGCTCTTGG	Bgl II	to generate the adenovirus plasmid of GFP-Rabl2^{D73GQ80L}
LV-RFP-Rabl2	LV-RFP-C1	TCTCGAGCTCAAGCTTCGATGGCAGGGGACAGAAACAGGCAC	GCGGTACCGTCGACTGCAGATTAGGAAGGAGATGGGCTCTTGGT	EcoRI	lentivirus plasmid of RFP-Rabl2
LV-RFP-Rabl2^{Q80L}	LV-RFP-C1	TCTCGAGCTCAAGCTTCGATGGCAGGGGACAGAAACAGGCAC	GCGGTACCGTCGACTGCAGATTAGGAAGGAGATGGGCTCTTGGT	EcoRI	lentivirus plasmid of RFP-Rabl2^{Q80L}
LV-RFP-Rabl2^{S35N}	LV-RFP-C1	TCTCGAGCTCAAGCTTCGATGGCAGGGGACAGAAACAGGCAC	GCGGTACCGTCGACTGCAGATTAGGAAGGAGATGGGCTCTTGGT	EcoRI	lentivirus plasmid of RFP-Rabl2^{S35N}
LV-RFP-Rabl2^{D73GQ80L}	LV-RFP-C1	TCTCGAGCTCAAGCTTCGATGGCAGGGGACAGAAACAGGCAC	GCGGTACCGTCGACTGCAGATTAGGAAGGAGATGGGCTCTTGGT	EcoRI	lentivirus plasmid of RFP-Rabl2^{D73GQ80L}
LV-3NG-Rabl2	LV-3×NeonGreen-C1	AAGCTGCAAGCTTCGATGGCAGGGGACAGAAACAGGC	TACCGTCGACTGCAGTTAGGAAGGAGATGGGCTCTTG	EcoRI	lentivirus plasmid of 3NG-Rabl2
LV-3NG-Bbs5	LV-3×NeonGreen-C1	AAGCTGCAAGCTTCGATGTCTGTGCTGGACGTGTTGTGG	TACCGTCGACTGCAGTCAACTCATCACTTCCCAAAGTCC	EcoRI	lentivirus plasmid of 3NG-Bbs5

LV-Ift27-GFP	LV-GFP-C1	GAACCGTCAGATCCGATGGTGAAGCTAGCTGCCAA	TGGCGACCGGTAGCGCCACCAGGGTATGGAATATGT	Nhe1	lentivirus plasmid of GFP-Ift27
pFLAG-Ift81	pFLAG-1	ACGATGACAAGCTTGAAATGAGTGACCAAATCAAATTC	ACGATATCTCTAGAGTCAGAGAACCAGCCGGTCCTC	EcoRI	To express FLAG-Ift81 in E. coli
pFLAG-Ift74	pFLAG-1	ACGATGACAAGCTTGAAATGGCCAGTAATCACAAATCTTCAG	ACGATATCTCTAGAGTCAGCTTCTGCTGGCATTATGTAGA	EcoRI	To express FLAG-Ift74 in E. coli
GST-Rabl2^{Q80L}	pGEX-4T-1	TGGGATACAGCAGGCCTGGAGCGGTTCCAGAGC	GCTCTGGAACCGCTCCAGGCCTGCTGTATCCCA	EcoRI	To express GST-Rabl2^{Q80L} in E.coli
GST-Rabl2^{S35N}	pGEX-4T-1	AGTGCGGTGGGCAAGAACAAACTCATGGAGAGA	TCTCTCCATGAGTTTGTTCTTGCCCACCGCACT	EcoRI	To express GST-Rabl2^{S35N} in E.coli

Primary antibodies

Name	Antigen	Biological source	Manifacturer and catalog number	Dilution	WB/IF
Rabl2	mouse Rabl2 (full-length)	Rabbit	Homemade	WB (1:3000); IF（1:1000）	WB/IF
Rabl2	mouse Rabl2	Genius Pig	Homemade	IF（1:1000）	IF
Acetylated-tubulin	sea urchin Acetylated-tubulin	Mouse	Sigma-Aldrich, T6793	WB (1:5000); IF（1:1000）	WB/IF
Rsph4a	mouse Rsph4a	Rabbit	Homemade	WB (1:1000)	WB
Flag-M2	Flag-M2	Rabbit	Sigma-Aldrich, F7425	WB (1:5000)	WB
anti-His	6xHis	Mouse	Sigma-Aldrich, H1029	WB (1:3000)	WB

GAPDH	human GAPDH	Rabbit	Proteintech, 10494-1-AP	WB (1:3000)	WB
GFP	GFP	Rabbit	Santa Cruz, sc-8334	WB (1:3000)	WB
GFP	GFP	Chicken	Invitrogen,A10262	IF（1:500）	IF
GST	GST	Mouse	Shanghai Wolwo Biotech, Mab-GS01	WB (1:3000)	WB
RFP	RFP	Rat	Chromotek, 5F8	WB (1:1000); IF(1:500)	WB/IF
Lamin B1	human Lamin B1	Rabbit	Proteintech, 12987-1-AP	WB (1:5000)	WB
Cep162	mouse Cep162 (1-300 aa)	Genius Pig	Homemade	IF(1:200)	IF
Cep164	mouse Cep164 (1-400aa)	Genius Pig	Homemade	WB (1:1000)	WB
Cep290	mouse Cep290 (2001-2479 aa)	Rabbit	Homemade	IF(1:200)	IF
GM130	human GM130	Mouse	BD,610823	WB(1:1000)	WB
ARL13b	human ARL13B	Rabbit	Proteintech, 17711-1-AP	WB (1:1000); IF(1:200)	WB/IF
GLI1	human GLI1	Rabbit	CST, 2534S	WB(1:1000)	WB
Gli2	mouse Gli2	Goat	R&D, AF3635	WB (1:1000); IF（1:1000）	WB/IF
GLI3	human GLI3	Goat	R&D, AF3690	IF（1:1000）	IF
SMO	human SMO	Mouse	Santa Cruz, sc-166685	WB (1:500);	WB/IF

				IF(1:100)	
IFT25	human IFT25	Rabbit	Proteintech, 15732-1-AP	WB (1:1000)	WB
Ift27	mouse Ift27 (full-length)	Rabbit	Homemade	WB (1:1000)	WB
IFT46	human IFT46	Rabbit	Sigma, HPA037909	WB (1:1000)	WB
IFT52	human IFT52	Rabbit	Proteintech, 17534-1-AP	WB (1:1000)	WB
IFT57	human IFT57	Rabbit	Proteintech, 11083-1-AP	WB (1:1000); IF(1:200)	WB/IF
IFT74	human IFT74	Goat	Santa Cruz, SC-74365	WB (1:1000)	WB
IFT80	human IFT80	Rabbit	GeneTex, GTX109393	WB(1:1000)	WB
IFT81	human IFT81	Rabbit	Proteintech, 11744-1-AP	WB (1:1000); IF(1:200)	WB/IF
IFT139	human IFT139	Rabbit	Sigma-Aldrich, HPA035495	WB(1:1000)	WB
IFT140	human IFT140	Rabbit	Proteintech, 17460-1-AP	WB(1:1000)	WB
BBS1	human BBS1	Rabbit	Proteintech, 21118-1-AP	WB(1:1000)	WB
BBS5	human BBS5	Rabbit	Proteintech, 14569-1-AP	WB (1:1000); IF(1:200)	WB/IF
BBS7	human BBS7	Rabbit	Proteintech, 13458-1-AP	WB (1:1000); IF(1:200)	WB/IF
LZTFL1	human LZTFL1	Rabbit	Proteintech, 17073-1-AP	WB (1:1000); IF(1:200)	WB/IF
GPR161	human GPR161	Rabbit	Proteintech, 13398-1-AP	WB (1:1000); IF(1:200)	WB/IF
ARL6	human ARL6	Rabbit	Proteintech, 12676-1-AP	WB (1:1000);	WB/IF

				IF(1:200)	
Secondary antibodies					
Name	Biological source	Manifacturer and catalog number	Dilution	WB/IF	
anti-Mouse IgG, HRP conjugate	Goat	Life Technologies,G-21040	1:5,000	WB	
anti-Rabbit IgG, HRP conjugate	Goat	Life Technologies,G-21234	1:5,000	WB	
anti-Goat IgG (H+L)-HRP	Rabbit	Life Technologies, R-21459	1:5,000	WB	
anti-Rat IgG, HRP conjugate	Goat	abclonal, AS028	1:5,000	WB	
Alexa Fluor 405 anti-mouse IgG(H+L)	Goat	Molecular Probes,A31553	1:500	IF	
Alexa Fluor 405 anti-rabbit IgG(H+L)	Goat	Molecular Probes,A31556	1:500	IF	
Anti-Rabbit IgG Alexa Fluor 488 conjugate	Donkey	Molecular Probes,A21206	1:1,000	IF	
Anti-Mouse IgG Alexa Fluor 488 conjugate	Donkey	Molecular Probes,A21202	1:1,000	IF	
Alexa Fluor 488 anti-chicken IgG(H+L)	Goat	Molecular Probes,A11039	1:1,000	IF	
Anti-Rabbit IgG Cy3 conjugate	Donkey	Jackson ImmunoResearch,711-165-152	1:1,000	IF	
Anti-Mouse IgG,Cy3	Donkey	Jackson	1:1,000	IF	

conjugate		ImmunoResearch,715-165-151			
Alexa Fluor 546 donkey anti-goat IgG(H+L)	donkey	Molecular Probes,A11056	1:1,000	IF	
Alexa Fluor 546 anti-rat IgG(H+L)	Goat	Molecular Probes,A11081	1:500	IF	
Alexa Fluor® 647-AffiniPure Anti-Guinea Pig IgG (H+L)	Donkey	Jackson ImmunoResearch,706-605-148	1:1,000	IF	