

## Supplementary materials

### Reagents

Reagent	brand	code	Application
Recombinant human TNFSF14/LIGHT	R&D systems	#664-LI-025/CF	Cell stimulation
NIK-SMI1	ProbeChem	PC-62514	Cell treatment
BAY11-7082	Cayman chem	10010266	Cell treatment
HiPerfect	Qiagen	301705	Cell transfection
Smooth muscle cell medium (SMCM)	ScienCell	1101-b	Cell culture
Smooth muscle cell growth supplements (SMCGS)	ScienCell	1152	Cell culture
Dulbecco's modified essential medium	Gibco	11995-065	Cell culture
Opti-MEM® I	Gibco	31985-070	Transfection
Penicillin/Streptomycin	ScienCell	0503	Cell culture
Foetal Bovine Serum	ScienCell	0010	Cell culture

### Short interfering RNAs and plasmids

Reagent	Brand	Code	Dose used
siNTC	Dharmacon	D-001810-10-05	40nM
siHVEM-B	Origene	SR305773B	40nM
siLTβR	Dharmacon	L-008023-00-0005	25nM
pCMV6-XL4-HVEM	Origene	SC117733	20ng/ml
pCMV6-XL4	Origene	pCMV6-XL4	20ng/ml

### Patient details

Patient	Gender	Age	Eosinophil count d/m/p	Use
1	M	13	40/70/>100	Fibroblasts
2	M	10	8/0/0	Fibroblasts
3	M	15	>100/75/6	Fibroblasts
4	M	12	0/0/0	Fibroblasts
5	M	5	3/0/0	Fibroblasts
6	F	2	0/0/0	Fibroblasts
7	F	19	100/30/45	Fibroblasts
8	M	16	100/100/72	Fibroblasts
9	Unknown	9	1/2/1	Fibroblasts
10	F	11	3/0/0	Fibroblasts
11	M	12	10/100/100	Fibroblasts
12	M	18	30/55/20	Fibroblasts/histology
13	M	8	27/2/0	Histology
14	F	9	30/0/0	Histology
15	M	7	85/10/85	Histology
16	M	10	>100/>100/>100	Histology
17	M	4	22/23/44	Histology
18	M	11	44/53/60	Histology
19	M	10	60/1/0	Histology

### Primers

Gene	Primer	5'-3'
RPL13A	FWD	CATAGGAAGCTGGGAGCAAG
	REV	GCCCTCCAATCAGTCTTCTG
ICAM1	FWD	TTGTTGGGCATAGAGACCCC
	REV	GGTTTTAGCTGTTGACTGCCC
IL32	FWD	AGAGCTGGAGGACGACTTCA
	REV	CTCGGCACCGTAATCCATCT

<b>IL33</b>	FWD	CATCTGGTACTCGCTGCCTGTC
	REV	CAACACCGTCACCTGATTCATT
<b>IL34</b>	FWD	CTTGGGATCTTCCTTGGCGT
	REV	CAGCTTGTCCCGCAGAAAAC
<b>CXCL5</b>	FWD	CACGCAAGGAGTTCATCCCA
	REV	TCCTTCCCGTTCTTCAGGGA
<b>BIRC3</b>	FWD	TCATCCGTCAAGTTCAAGCCA
	REV	TCTCCTGGGCTGTCTGATGT
<b>DKK1</b>	FWD	TGACAACTACCAGCCGTACC
	REV	CGAGACAGATTTGCACGCCT
<b>WNT2b</b>	FWD	GATCCGAGAGTGTCAGCACC
	REV	CTGCCTCTCGGCTACTTCTG
<b>WNT5a</b>	FWD	TTTGGCAGGGTGATGCAGAT
	REV	GCCATAGTCGATGTTGTTCGC
<b>BMP6</b>	FWD	TCATTGCACCCAAGGGCTAT
	REV	GCACGGTTTGGGGACATACT
<b>SEMA3B</b>	FWD	CCTCCCTCAACCTGGACAAC
	REV	GCAAATGGGTGCGGTTGTAG
<b>HVEM</b>	FWD	GACCCTGGAGGAATGTCAGC
	REV	CGAGGCTCCCTGAGAGAAAC
<b>LT<math>\beta</math>R</b>	FWD	CCGACACAACCTGCAAAAAT
	REV	GAGCAGAAAGAAGGCCAGTG

## Antibodies

<b>Reagent</b>	<b>brand</b>	<b>code</b>	<b>Application</b>
<b>Anti-ICAM1-PE</b>	eBioscience	#12-0549-42	Flow cytometry
<b>Anti-VCAM1-APC</b>	Biolegend	305810	Flow cytometry
<b>Anti-CD74-PerCP</b>	Biolegend	357607	Flow cytometry
<b>Anti-HVEM-APC</b>	Biolegend	318808	Flow cytometry
<b>Polyclonal goat anti-LT<math>\beta</math>R</b>	R&D systems	AF629	Flow cytometry
<b>Anti-p65</b>	Cell signaling technology	8242S	Western blot and immunofluorescence
<b>Anti-p100/p52</b>	Cell signaling technology	3017T	Western blot
<b>Anti-GAPDH</b>	Cell signaling technology	5174S	Western blot
<b>Anti-Lamin</b>	Thermo	MA3-1000	Western blot
<b>Anti-<math>\beta</math>-Tubulin</b>	Cell signaling technology	2128S	Western blot
<b>Anti-Vimentin</b>	Sigma	V6389	immunofluorescence
<b>Anti-WNT2b</b>	Abcam	Ab178418	immunofluorescence
<b>Donkey anti-goat IgG Alexa Fluor 488</b>	Life technologies	#A11055	Flow cytometry
<b>Alexa fluor 488</b>	Goat anti-rabbit IgG	Life technologies #A11008	ICC-F
<b>Alexa fluor 488</b>	Goat anti-mouse	Invitrogene, #A10680	IF-P
<b>Alexa fluor 594</b>	Goat Anti-rabbit	Life technologies, #A11012	IF-P
<b>Isotype</b>	Goat IgG control	R&D systems, #AB-108-C	Flow cytometry

<b>Isotype-PE</b>	Mouse IgG1k	eBioscience, #12-4714-82	Flow cytometry
<b>Isotype-APC</b>	Mouse IgG1	Biolegend, #406609	Flow cytometry
<b>Isotype</b>	Mouse IgG	Abcam, #ab190475	IF-P
<b>Isotype</b>	Rabbit polyclonal IgG	Abcam, #ab27478	IF-P
<b>Phalloidin iFluor 594</b>		ab176757	IF-C

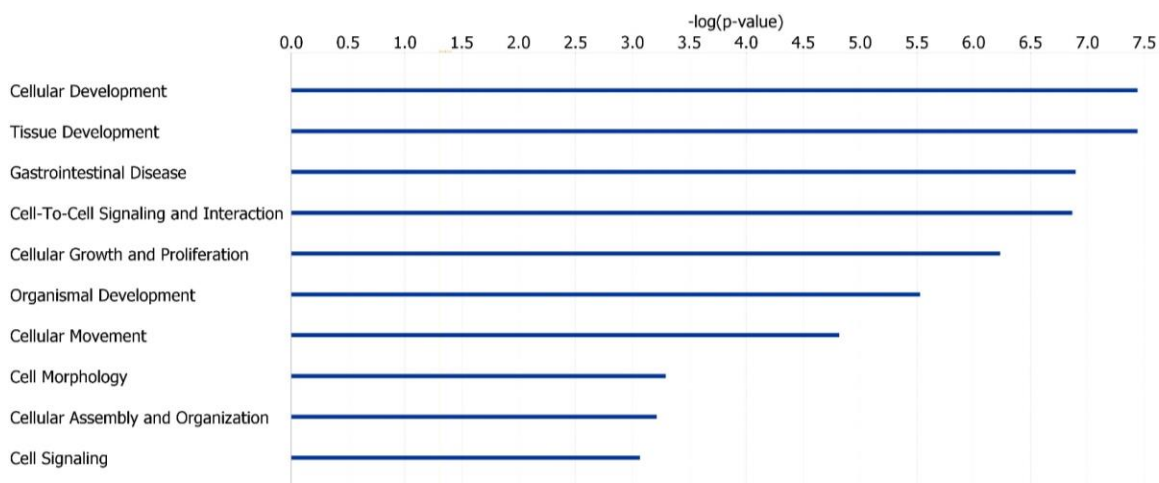
### RNAscope probes

<b>Reagent</b>	<b>Brand</b>	<b>code</b>	<b>Dilution</b>
<b>Hs-vimentin</b>	ACD-Biotechne	310441-C2	1:50
<b>Hs-ICAM1</b>	ACD-Biotechne	402951	Undiluted
<b>Hs-IL-34</b>	ACD-Biotechne	313011-C3	1:50
<b>Hs-WNT2B</b>	ACD-Biotechne	453361	Undiluted

### Supplementary figure 1

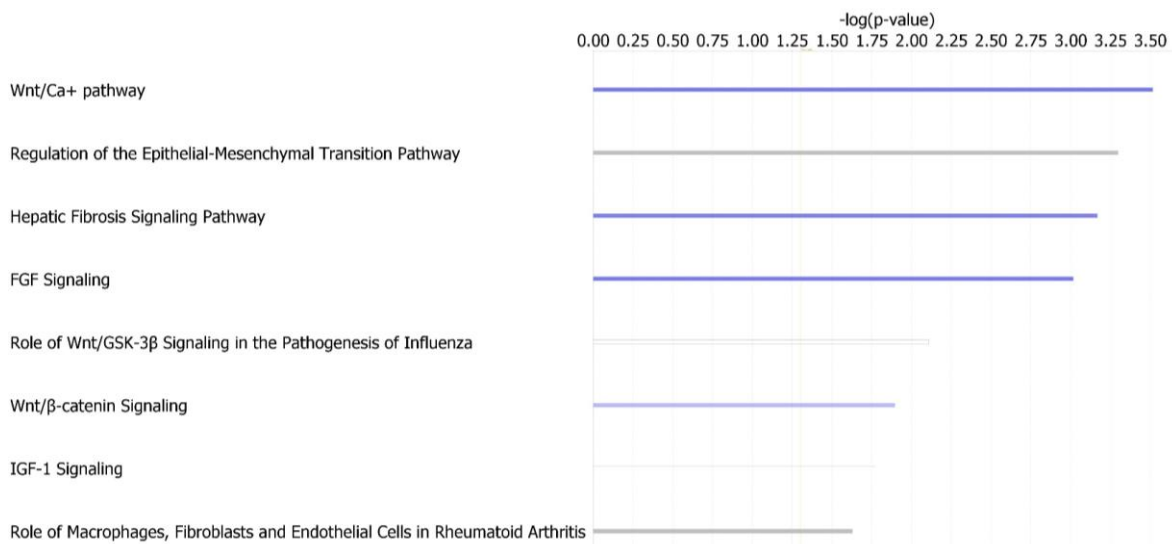
**A**

#### Diseases and functions

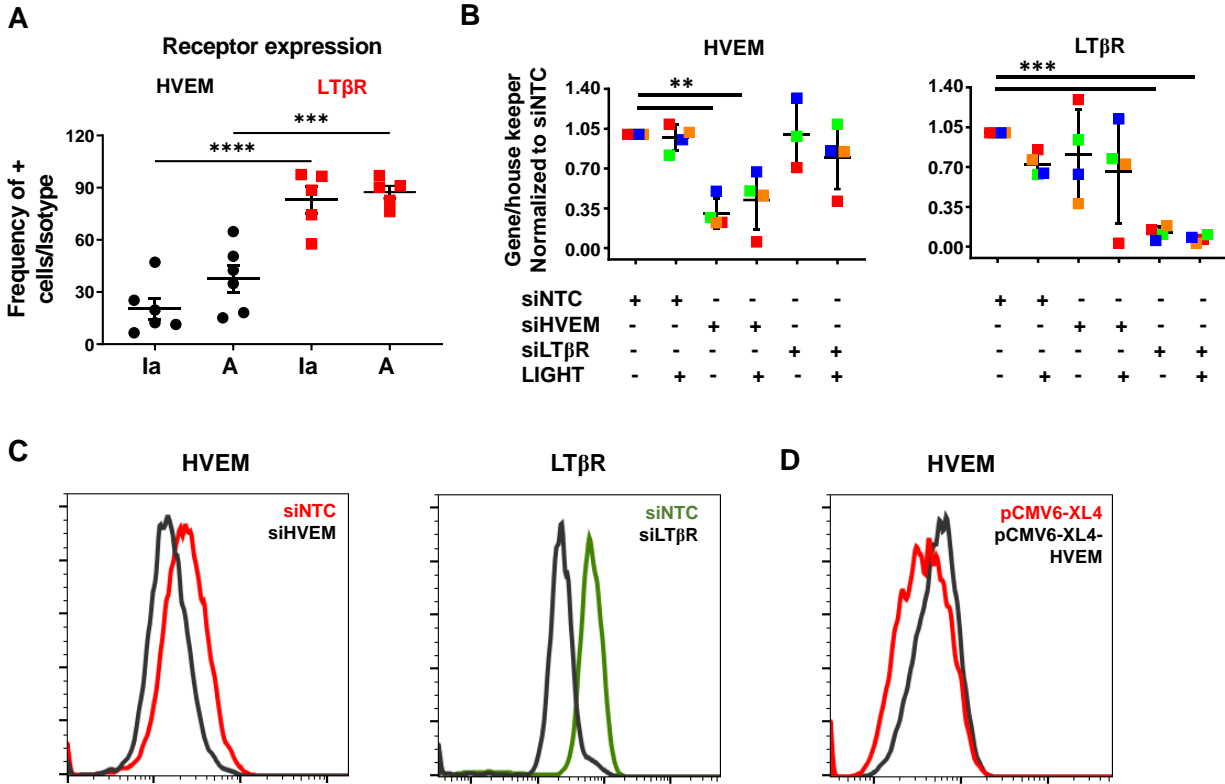


**B**

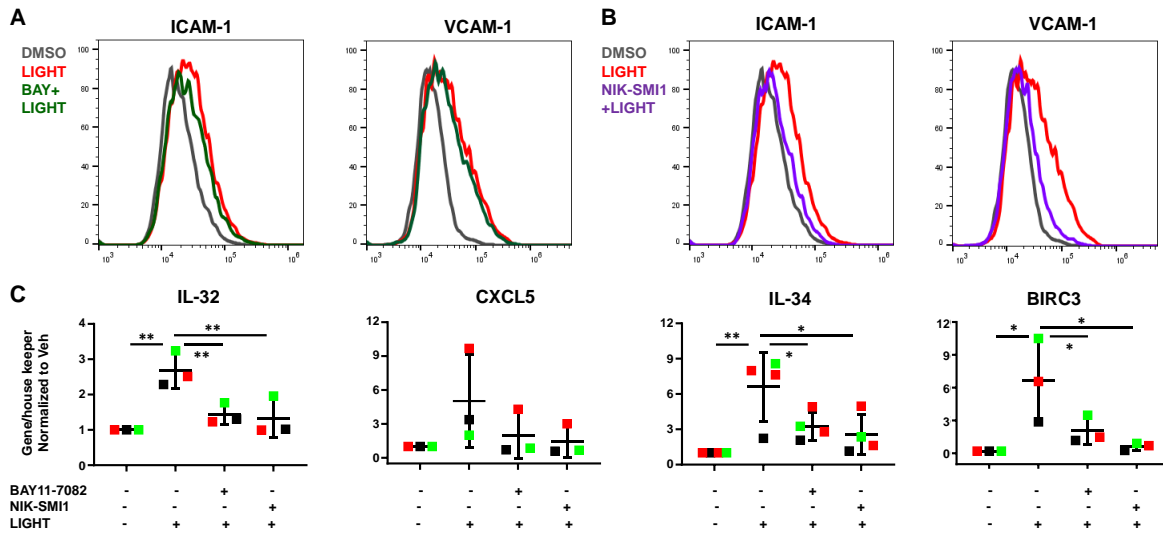
#### Signaling pathways



### Supplementary figure 2



### Supplementary figure 3



**Supplementary Figure 1.** Ingenuity Pathway Analysis of LIGHT down-regulated genes showing relevant diseases and functions and signaling pathways (n=4, >1.5 fold,  $p < 0.05$ ).

**Supplementary figure 2.** A, quantification of % of HVEM and  $LT\beta R$  positive cells normalized to isotype from plots shown in Figure 1C (n=6,  $*p < 0.05$ ). Validation of HVEM and  $LT\beta R$  silencing in cells transfected with scramble RNA (siNTC) or siRNAs against HVEM (siHVEM) or  $LT\beta R$  (si $LT\beta R$ ) and untreated or treated with LIGHT for 24 hours analyzed by RT-PCR (B, n=4), or in cells transfected with siNTC and siHVEM or si $LT\beta R$  (C, n=3) or with pCMV6-XL4 or pCMV6-XL4L-HVEM analyzed by flow cytometry (D, n=3). Each colored dot represents fibroblasts from an independent donor.  $*p < 0.05$  and  $***p < 0.001$ .

**Supplementary figure 3.** Representative histograms of flow cytometry of ICAM-1 and VCAM-1 in normal esophageal fibroblasts pre-treated with BAY11-7082 (A) or NIK-SMI1 (B) for 1 h and then treated with LIGHT for 4h (n=3). RT-PCR of inflammatory genes in esophageal fibroblasts pre-treated with BAY11-7082 or NIK-SMI1 for 1h and then treated with LIGHT for 4h (C, n≥3). Each color dot represents fibroblasts from an independent donor.  $*p < 0.05$ ,  $**p < 0.01$ .