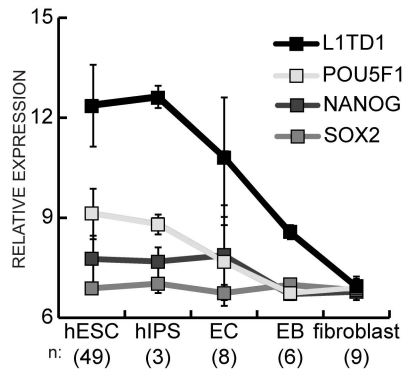
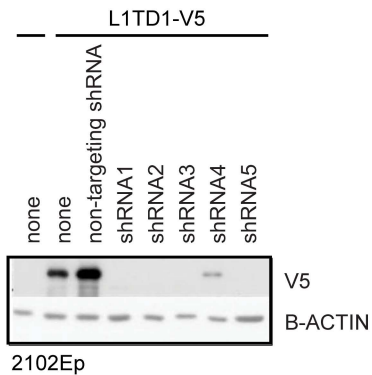


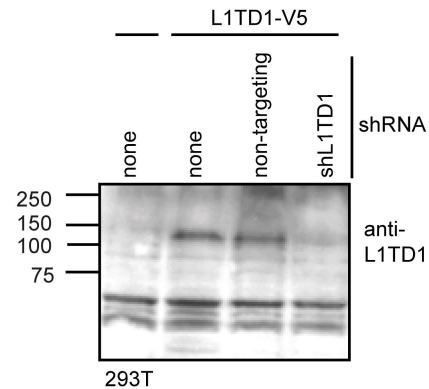
S1A



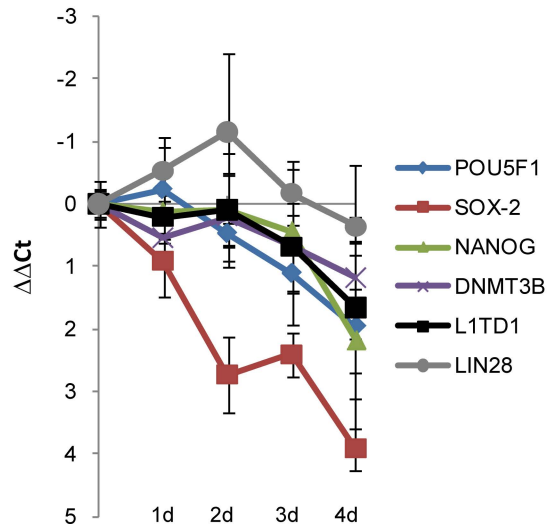
S1B



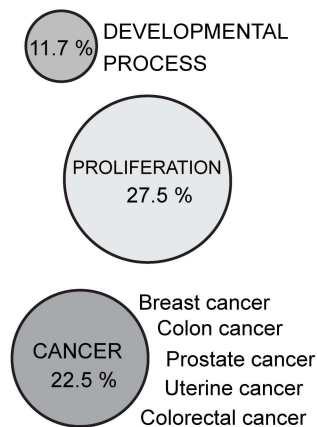
S1C



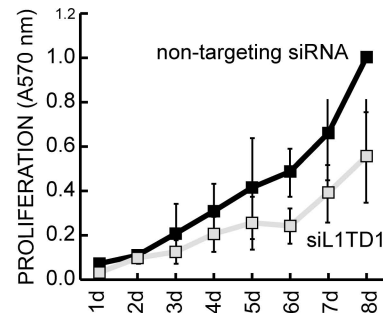
S1D

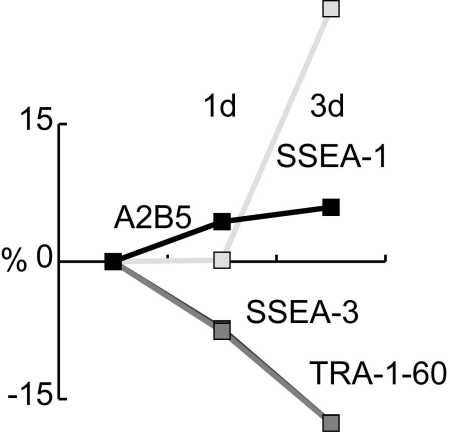


S1E



S1F





siOCT4

- SSEA-3
- TRA-1-60
- SSEA-1
- A2B5

RRM domain

L1TD1 Homo Sapiens (701-795)

pORF1 Homo Sapiens (156-251)

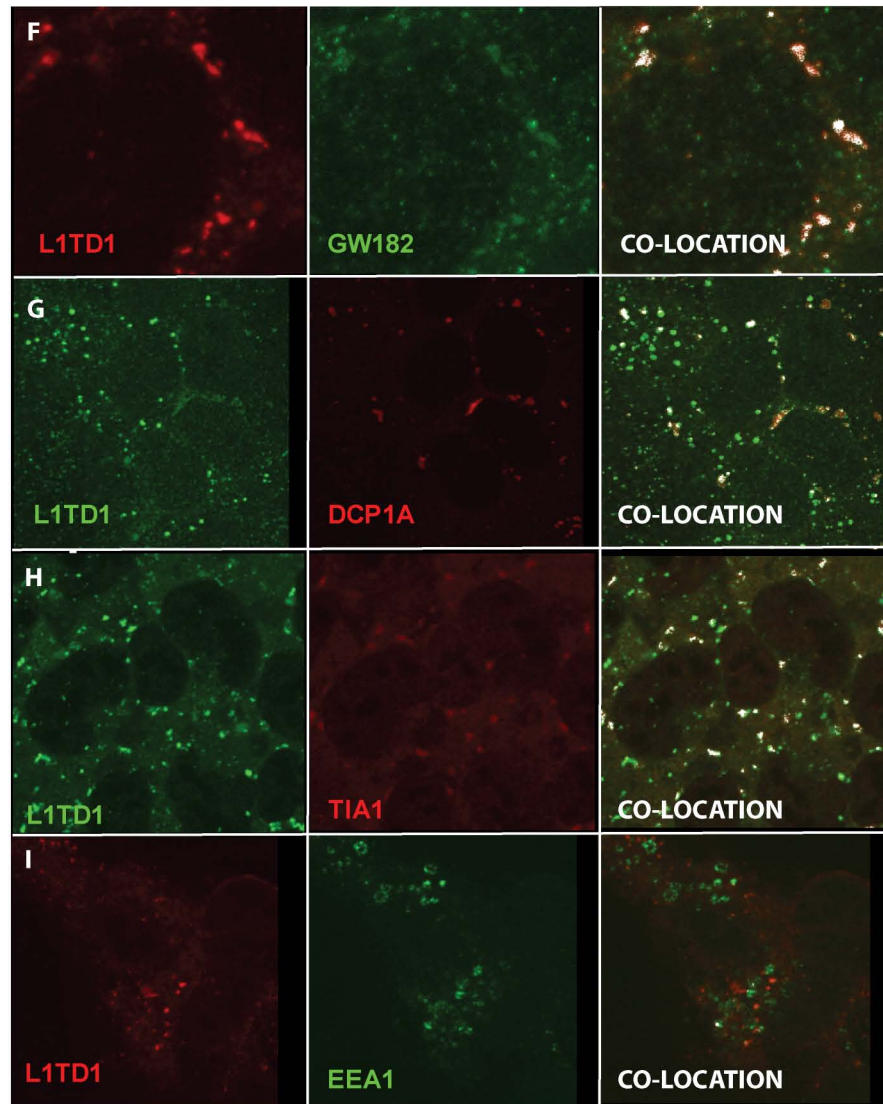
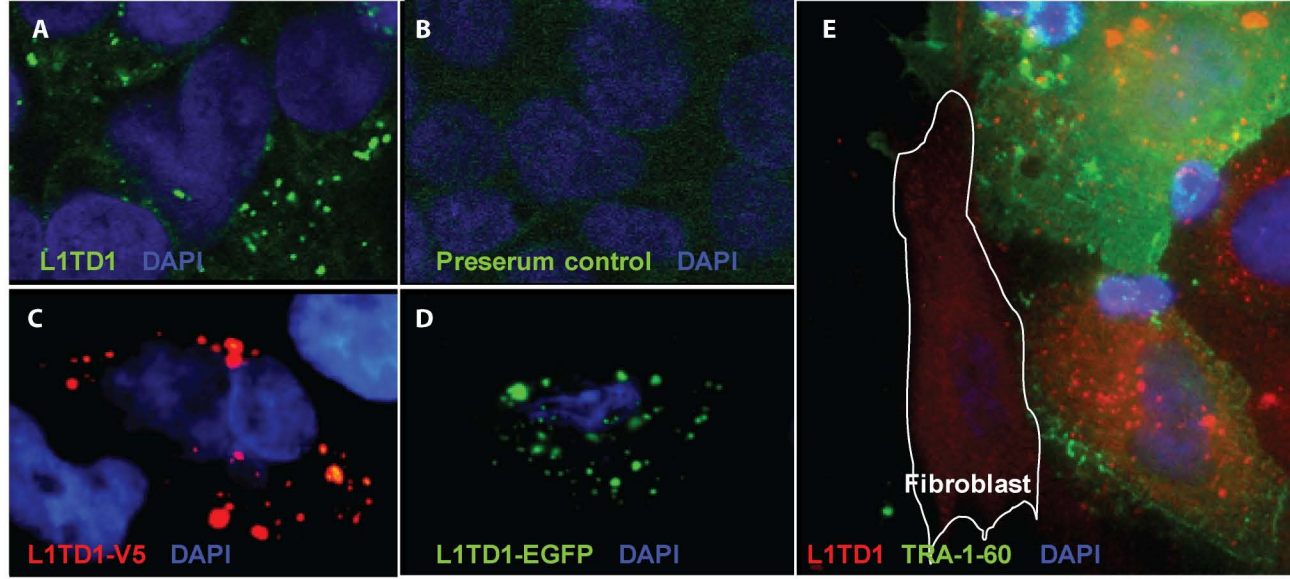
*
N I R L I G I P E K E S Y E N - R A E D I I K E I I D E N F A E L K K G S S L E I V S A C R M P S K I D E K R L T P R H I L V K F W N S S D K E K I I R A S R E R R E I T Y Q G T R I R L T A D
N L R L I G V P E S D V E N G T K L E N T L Q D I I Q E N F P N L A R Q A N I Q I Q E I Q R I P Q R Y S S R R A T P R H I I V R F T K V E M K E K M L R A A R E K G R V T L K G K P I R L T A D
*

CTD domain

L1TD1 Homo Sapiens (796-860)

pORF1 Homo Sapiens (252-317)

*
L S L D T L D A R S K W S N V F K V L L E K G F N P R I L Y P A K M A F D F F G K T K V F L S I E E F R D Y V L H M P T L R E L L
L S A E T L Q A R R E W G P I F N I L K E K N F Q P R I S Y P A K L S F I S E G E I K Y F I D K Q M L R D F V I T R P A L K E L L



SUPPLEMENTAL DATA (Narva, Rahkonen & Reddy et al.)

1

References:

1 Khazina E, Weichenrieder O Non-LTR retrotransposons encode noncanonical RRM domains in their first open reading frame. *PROC NATL ACAD SCI U S A* 2009;106:731-736.

2 Mori S, Tanaka M, Nanba D et al. PACSIN3 binds ADAM12/meltrin alpha and up-regulates ectodomain shedding of heparin-binding epidermal growth factor-like growth factor. *J BIOL CHEM* 2003;278:46029-46034.

3 Hashimoto S, Onodera Y, Hashimoto A et al. Requirement for Arf6 in breast cancer invasive activities. *PROC NATL ACAD SCI U S A* 2004;101:6647-6652.

4 Berra E, Benizri E, Ginouves A et al. HIF prolyl-hydroxylase 2 is the key oxygen sensor setting low steady-state levels of HIF-1alpha in normoxia. *EMBO J* 2003;22:4082-4090.

SUPPLEMENTAL DATA (Narva, Rahkonen & Reddy et al.)

1

Table1. Antibodies used in the study:

Antibody	Catalog number	Manufacturer	Dilution used
Western blotting:			
L1TD1	HPA028501	Sigma	1:1000
OCT-4	sc-9081	Santa Cruz Biotechnology	1:500
NANOG	sc-33759	Santa Cruz Biotechnology	1:500
NANOG	AF1997	R&D Systems	1:1000
SOX-2	MAB2018	R&D Systems	1:1000
GAPDH	5G4	HyTest Ltd	1:20000
LIN28	ab46020	Abcam	1:1500
DNMT3B	ab13604	Abcam	1:150
pSMAD1/5/8	9511L	Cell Signaling	1:200
β-actin	A5441	Sigma	1:10000
RHA	ab54593	Abcam	1:1000
PABP	sc-32318	Santa Cruz Biotechnology	1:1000
anti-rabbit-HRP	554021	BD Pharmingen	1:10000
anti-mouse-HRP	sc-2005	Santa Cruz Biotechnology	1:10000
Immunocytochemistry:			
anti-V5	P/N 46-0705	Invitrogen	1:50-200
Alexa Fluor 555 conjugated goat anti-mouse IgG (H+L)	A21424	Invitrogen	1:50-200
Alexa Fluor 488 anti - Rabbit	A21441	Invitrogen	1:50-200
Alexa Fluor 594 anti - Rabbit	A11037	Invitrogen	1:50-200
Alexa Fluor 488 anti - mouse	A11001	Invitrogen	1:50-200
TRA1-60	MAB4360	Millipore	1:50-200

Ago2	011-22033	Wako	1:50-200
LIN28	ab75483	Abcam	1:50-200
GW182	ab70522	Abcam	1:50-200
Dcp1a	ab57654	Abcam	1:50-200
EEA1	ab70521	Abcam	1:50-200
TIA1	ab2712	Abcam	1:50-200
Flow cytometry:		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
SSEA-1		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
A2B5		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
SSEA-3		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
TRA-1-60		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
TRA-1-81		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
TRA-1-85		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
SSEA-4		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
TRA-2-54		gift from Dr. P.W. Andrews, Sheffield, UK	1:25
FITC Goat anti-mouse IgG + IgM	M30801	CALTAG Laboratories	1:150
ChIP:			
NANOG	AF1997	R&D systems	10ug/500ug chromatin
OCT-4	SC-8628x	Santa Cruz	10ug/500ug chromatin

SOX-2	#5024s	Cell signaling	10ug/500ug chromatin
Rabbit IgG	#2729s	Cell signaling	10ug/500ug chromatin
Goat IgG	Sc-2028	Santa cruz	10ug/500ug chromatin

Table 2. Sequences of primers, probes, and siRNAs used in the study:

Purpose	Sequence
Vectors	pET-20b(+) L1TD1: 5'-CGCGCGCCATGGATTCTGATGTATCTACTAGTGT-3' 5'-CGCGCGCTCGAGAGGTATATTATCCCCAGTAA-3'
	pEF6/V5-His-TOPO L1TD1: 5'-GCCATGTCTGATGTATCTACTAG-3' 5'-AGGTATATTATCCCCAGTAAT-3'
	pCAGG-EGFP L1TD1 5'-CGCGCGCTCGAGATGTCTGATGTATCTACTAG-3' 5'-CGCGCGACCGGTTGAGGTATATTATCCCCAGT-3'
RT-PCR	EF1α: probe: 5'-(FAM)-AGCGCCGGCTATGCCCTG-(TAMRA)-3' sense: 5'-CTGAACCATCCAGGCCAAAT-3' antisense: 5'-GCCGTGTGGCAATCCAAT-3'
	L1TD1: probe 69 (Roche) sense: 5'-TCCCACAAAAGGAAGAAATAAATC-3' antisense: 5'-GCTCTATGCTTTGAGTCTATTAGGG-3'
	POU5F1: probe 35 (Roche) sense: 5'-AGCAAAACCCGGAGGAGT-3' antisense: 5'-CCACATCGGCCTGTGTATATC-3' probe 69 (Roche) sense: 5'-AGCAAAACCCGGAGGAGT-3' antisense: 5'-CCACATCGGCCTGTGTATATC-3' probe 60 (Roche) sense: 5'-CTTCGCAAGCCCTCATTTC-3'

		<p>antisense: 5'- GAGAAGGCGAAATCCGAAG-3' probe 52 (Roche)</p> <p>sense: 5'- CCTGTCTCCGTCACCACTCT -3'</p> <p>antisense: 5'- GGCACAAACTCCAGGTTTTTC -3' probe 69 (Roche)</p> <p>sense: 5'- CTTTGAGGCTCTGCAGCTTAG -3'</p> <p>antisense: 5'- CTGCTTTGCATATCTCCTGAAG -3' probe 57 (Roche)</p> <p>sense: 5'- CCGCCGTATGAGTTCTGTG -3'</p> <p>antisense: 5'- CAGGCTGAGAGGTCTCCAA -3'</p>
		<p>SOX2:</p> <p>probe 19 (Roche)</p> <p>sense: 5'-ATGGGTTCCGGTGGTCAAGT-3'</p> <p>antisense: 5'-GGAGGAAGAGGTAACCACAGG-3'</p>
		<p>NANOG:</p> <p>probe 87 (Roche)</p> <p>sense: 5'- CCTGAACCTCAGCTACAAACAG -3'</p> <p>antisense: 5'- GCTATTCTTCGGCCAGTTGT -3'</p>
		<p>DNMT3B:</p> <p>probe 83 (Roche)</p> <p>sense: 5'-GGAAATTAGAATCAAGGAAATACGA-3'</p> <p>antisense: 5'-AATTTGTCTTGAGGCGCTTG-3'</p>
		<p>LIN28:</p> <p>probe 23(Roche)</p> <p>sense: 5'-AAGCGCAGATCAAAAGGAGA-3'</p> <p>antisense: 5'-CTGATGCTCTGGCAGAAGTG-3'</p>
shRNAs siRNAs	and	<p>siL1TD1 1: GCAAGGACGTATCAGCAATTA</p> <p>siL1TD1 2: AGGACAGAGTTTCAGCAAATA</p>

	<p>siL1TD1 3: GACAGAGTTTCAGCAAATAATC</p> <p>siL1TD1 4: GCCGACCTTTCATCAGCAACA</p> <p>siL1TD1 5: GAGATGAGTCATGATGAGCATA</p>
	<p>siOCT-4: AAGGAUGUGGUCCGAGUGUGG</p> <p>siSOX2: AAAACCAAGACGCUCAUGAAG</p> <p>siNANOG: AAGGGUUAAGCUGUAACAUAC</p>
	<p>nontargeting shRNA</p> <p>scr1: GCGCGCUUUGUAGGAUUCG [2]</p> <p>nontargeting siRNA sequences:</p> <p>scr2: AAUUCUCCGAACGUGUCACGU [3]</p> <p>scr3: CCUACAUCCCGAUCGAUGAUG [4]</p>
ChIP	<p>L1TD1 Sense:5'-AGGTGACCTTGGGGTTCAG-3'</p> <p>L1TD1 Antisense: 5'- TCCCCGAAATCGCATTC -3'</p>