

Long non-coding RNA *LINC00926* is a biomarker for naïve B-cells with prognostic value in advanced stage classic Hodgkin lymphoma

Authors

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Supplementary Files

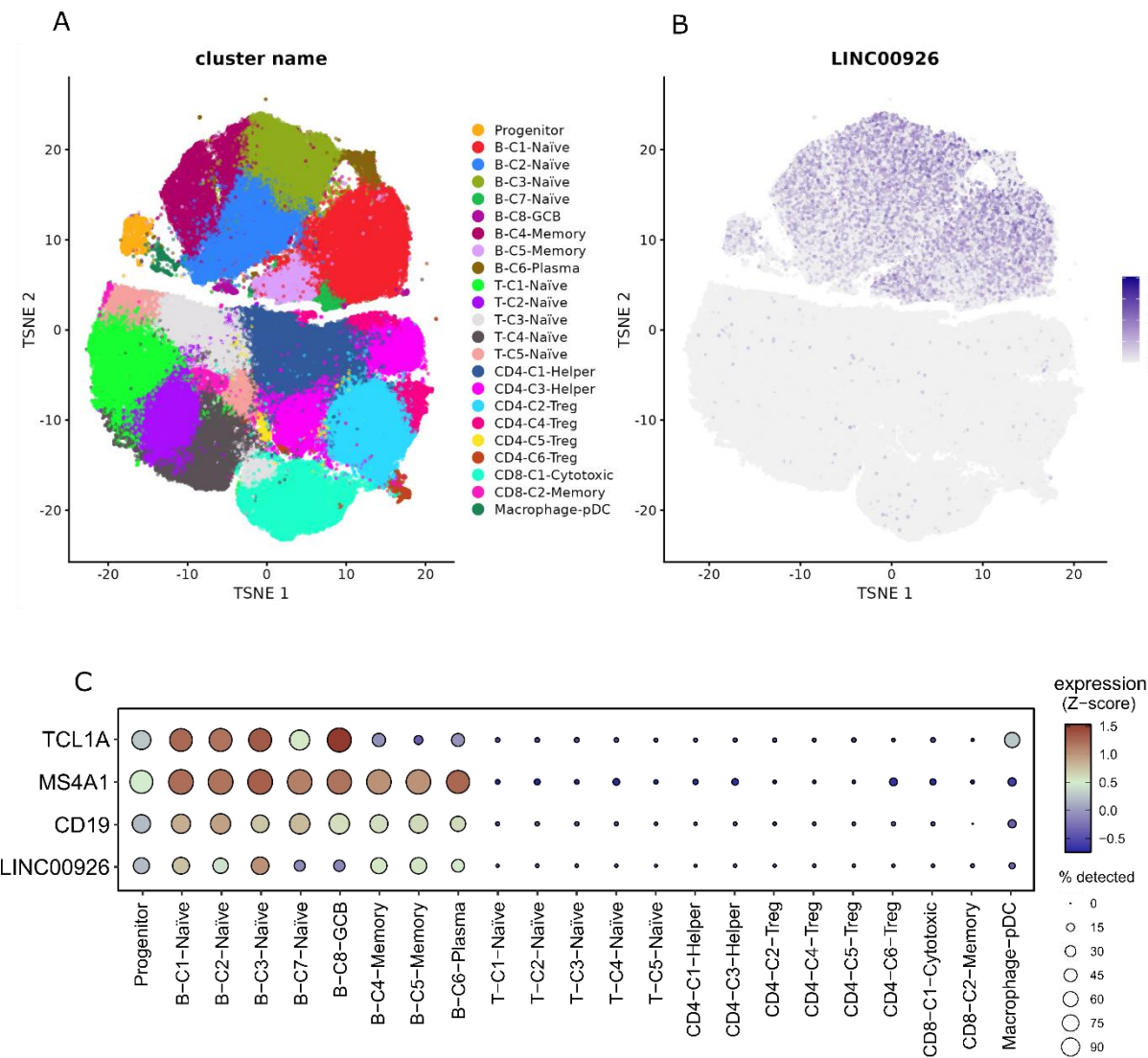


Figure S1: Single-cell expression of all cells from 28 cHL in tSNE space (first two dimensions), as in data from Aoki et al.^{5,6} Cells are coloured according to PhenoGraph cluster (**A**). Cells expressing LINC00926 are shown in (**B**). (**C**) Bubble plot showing the expression level of the genes shown on the Y axis, as well as the % of expressing cells in the clusters defined on the X axis.

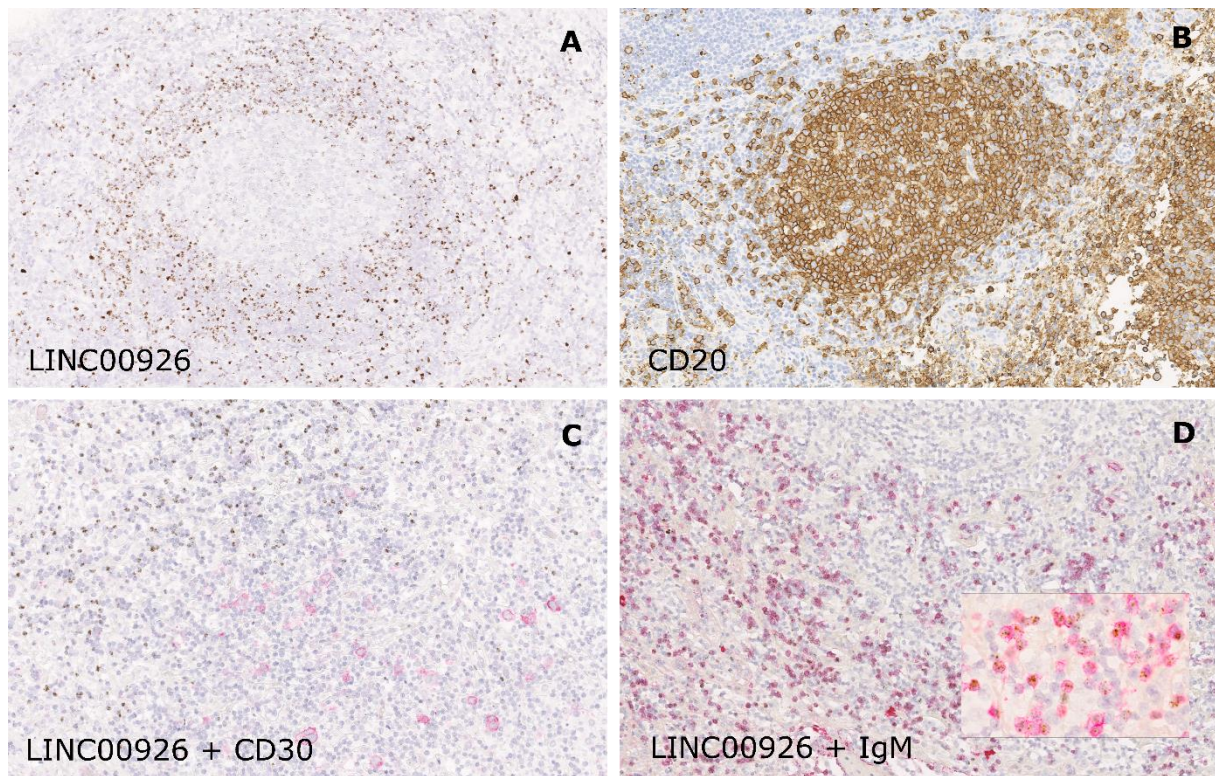


Figure S2: ISH analysis showing expression of LINC00926 in IgM-positive B-cells. (A) RNAScope-based *in situ* hybridization (ISH) analysis of LINC00926 in a section of a reactive lymph node. (B) Immunohistochemistry (IHC) analysis of CD20 in a consecutive section of the same germinal center. (C) Combined IHC and RNAScope-based ISH analysis of CD30 (red) and LINC00926 (brown) respectively, in a tissue section of a cHL sample. (D) Combined IHC and RNAScope-based ISH analysis of IgM (red) and LINC00926 (brown) respectively, in a tissue section of the same cHL sample. In situ hybridization was performed using the RNAScope® 2.5 HD Detection Kit—BROWN (ACD, Cat. No. 322310). LINC00926 expression was detected using the RNAScope® Probe - Hs-LINC00926-O1 (ACD, Cat No. 858141). Tissue hybridizations were performed as described by the manufacturer. When combined with IHC, IHC was started after the DAB reaction. Quantitative assessment in representative regions of interest showed that 80% of the stained cells were positive for both LINC00926, 16% were positive for IgM only and 4% were positive for LINC00926 only.

Table S1: Transcripts used for a nanoString custom panel for the analysis of coding and non-coding cell type biomarkers. The table shows: a) the Ensembl transcript ID; b) the transcript name; c) the specificity of expression according to our analysis of published PBMC gene expression data; d) the transcript biotype according to the Ensembl annotation; e) the genomic coordinates for the transcript with out annotation; f) if the transcripts are already known cell type-specific markers.

Nr.	Transcript ID	Name	Marker for	Transcript type	Genomic coordinates	novel
T001	ENST00000454385.6	LINC00892	T CD4	lncRNA		yes
T002	ENST00000417930.1	LINC01871	T CD8	lncRNA		yes
T004	ENST00000643127.1	LINC02694	Tregs	lncRNA		yes
T005	ENST00000608142.1	RP11-1399P15.1	Tregs	lncRNA		yes
T006	ENST00000528781.1	RP11-672A2.6	Tregs	lncRNA		yes
T007	ENST00000443373.1	LINC02195	Tregs	lncRNA		yes
T008	ENST00000606743.1	AL645933.2	Tregs	lncRNA		yes
T010	ENST00000544591.1	LINC02446	T CD8	lncRNA		yes
T011	n.a.	lncCD8NU1	T CD8 Naive U	lncRNA	chr1:80,351,610-80,351,948 (+)	yes
T012	n.a.	lncCD8NU1-AS	T CD8 Naive U	lncRNA	chr1:80,351,610-80,351,948 (-)	yes
T013	ENST00000441255.7	LINC02384	NK cells	lncRNA		yes
T014	ENST00000651667.1	LINC00861	NK, Tregs, FTH, CD8	lncRNA		yes
T015	ENST00000561999.1	LINC02256	NK cells	lncRNA		yes
T016	n.a.	lncCD8CMS1	T CD8	lncRNA	chr2:228,516,065-228,517,174 (+)	yes
T017	n.a.	lncCD8CMS1-AS	T CD8	lncRNA	chr2:228,516,065-228,517,174 (-)	yes
T018	n.a.	lncCD8CMS2	T CD8	lncRNA	chr20:53,937,811-53,941,548	yes
T019	n.a.	lncCD8CMS3	T CD8	lncRNA	chr8:85,467,891-85,468,763 (+)	yes
T020	n.a.	lncCD8CMS3-AS	T CD8	lncRNA	chr8:85,467,891-85,468,763 (-)	yes
T021	ENST00000664007.1	RP11-16D24.1	T CD8	lncRNA		yes
T022	ENST00000508266.1	LEF1-AS1	T CD4	lncRNA		yes
T023	ENST00000477916.5	MDS2	T CD4	lncRNA		yes
T025	ENST00000552663.2	LINC02356	Myeloid	lncRNA		yes
T026	ENST00000666926.1	RP11-750H9.5	Myeloid	lncRNA		yes
T027	ENST00000569362.2	LINC02182	Myeloid	lncRNA		yes
T028	ENST00000456651.1	LINC01357	Myeloid	lncRNA		yes
T029	ENST00000519068.3	MSC-AS1	Myeloid	lncRNA		yes
T030	ENST00000513626.3	LUCAT1	Myeloid	lncRNA		yes
T031	ENST00000436469.1	AC022816.2	Myeloid	lncRNA		yes
T032	ENST00000560647.5	RP11-519G16.3	Myeloid	lncRNA		yes
T034	ENST00000664539.1	LINC01712	B cells	lncRNA		yes
T035	ENST00000556386.1	RP11-164H13.1	B cells	lncRNA		yes
T036	ENST00000501726.1	LINC00926	B cells	lncRNA		yes
T037	ENST00000656833.1	RP3-383B8.1	B cells	lncRNA		yes
T038	ENST00000659969.1	LINC01781	B cells	lncRNA		yes
T039	ENST00000630242.2	FAM30A	B cells	lncRNA		yes
T040	ENST00000448058.1	LINC00582	Plasmablasts	lncRNA		yes
T041	ENST00000667133.1	LINC02362	Plasmablasts	lncRNA		yes
T042	ENST00000405369.3	LINC01644	T CD4	lncRNA		yes

T044	ENST00000606069.1	LINC02084	NK cells	lncRNA		yes
T046	ENST00000432133.1	AC007556.3	Neutr, Baso, Granulo	lncRNA		yes
T047	ENST00000507949.1	RP11-73G16.2	Myeloid	lncRNA		yes
T048	ENST00000411630.6	DANCR	Housekeeping	lncRNA		yes
T049	ENST00000617791.1	MALAT1	Housekeeping	lncRNA		yes
T050	ENST00000373789.8	RTKN2	Treg	PCG		yes
T051	ENST00000305748.7	KRT73	T CD4	PCG		yes
T052	ENST00000368115.5	FCER1A	Myeloid	PCG		yes
T053	ENST00000368167.8	CD1E	Myeloid	PCG		yes
T054	ENST00000518237.6	IDO1	Myeloid	PCG		yes
T055	ENST00000349618.8	ZNF683	T CD8 EM, CM	PCG		yes
T056	ENST00000431380.5	SPON2	NK cells	PCG		yes
T057	ENST00000333493.9	ADGRG3	Neutr, Baso, Granulo	PCG		yes
T058	ENST00000310833.12	CD34	Progenitors	PCG		yes
T059	ENST00000371174.5	DNTT	Progenitors	PCG		yes
T060	NM_001770.4	CD19	B-cells	PCG		no
T061	NM_152866.2	MS4A1	B-cells	PCG		no
T062	ENST00000554012.5	TCL1A	B-cells	PCG		yes
T063	NM_000732.4	CD3D	T-cells	PCG		no
T064	NM_000733.2	CD3E	T-cells	PCG		no
T065	NM_000616.4	CD4	T CD4	PCG		no
T066	NM_001768.5	CD8A	T CD8	PCG		no
T067	NM_004931.3	CD8B	T CD8	PCG		no
T068	NM_016382.2	CD244	Exhausted CD8 T cells	PCG		no
T069	NM_005442.2	EOMES	Exhausted CD8 T cells	PCG		no
T070	NM_002286.5	LAG3	Exhausted CD8 T cells	PCG		no
T071	NM_006433.2	GNLY	Cytotoxic cells	PCG		no
T072	NM_004131.3	GZMB	Cytotoxic cells	PCG		no
T073	NM_005041.3	PRF1	Cytotoxic cells	PCG		no
T074	NM_021155.2	CD209	DC	PCG		no
T075	NM_181755.1	HSD11B1	DC	PCG		no
T076	NM_004244.4	CD163	Macrophages	PCG		no
T077	NM_001251.2	CD68	Macrophages	PCG		no
T078	NM_006770.3	MARCO	Macrophages	PCG		no
T079	ENST00000367818.4	XCL1	NK cells	PCG		yes
T080	ENST00000400864.3	KIR2DL3	NK cells	PCG		yes
T081	NM_014009.3	FOXP3	Tregs	PCG		no
T082	ENST00000296046.4	CPA3	Mast cells	PCG		yes
T083	ENST00000267845.8	HDC	Mast cells	PCG		yes
T084	NM_002987.2	CCL17	HRS cell	PCG		no
T085	NM_152942.2	TNFRSF8	HRS cell	PCG		no
T086	NM_014143.3	CD274	PD1 ligand	PCG		no
T087	NM_005018.1	PDCD1	PD1 receptor	PCG		no
T088	NM_032782.3	HAVCR2	TIM3 receptor	PCG		no

T089	NM_000181.1	GUSB	Housekeeping	PCG		no
T090	NM_024107.2	TMUB2	Housekeeping	PCG		no
T091	NM_000402.2	G6PD	Housekeeping	PCG		no
T092	NM_000937.2	POLR2A	Housekeeping	PCG		no
T093	NM_006852.2	TLK2	Housekeeping	PCG		no
T094	NM_000122.1	ERCC3	Housekeeping	PCG		no
T095	NM_032364.5	DNAJC14	Housekeeping	PCG		no
T096	NM_172195.3	EIF2B4	Housekeeping	PCG		no
T097	NM_006802.2	SF3A3	Housekeeping	PCG		no
T098	NM_001142443.1	EDC3	Housekeeping	PCG		no
T099	NM_001199140.1	AMMECR1L	Housekeeping	PCG		no
T100	NM_153603.3	COG7	Housekeeping	PCG		no
T101	NM_001164239.1	DHX16	Housekeeping	PCG		no