The pre-B-cell receptor associated protein VpreB3 is a useful diagnostic marker for identifying *c-MYC* translocated lymphomas

Scott J. Rodig,[1] Jeffery L. Kutok,[1] Jennifer C. Paterson,[2] Hiroaki Nitta,[3] Wenjun Zhang,[3] Bjoern Chapuy,[4] Lynette K. Tumwine,[5] Santiago Montes-Moreno,[6] Claudio Agostinelli,[7] Nathalie A. Johnson,[8] Susana Ben-Neriah,[8] Pedro Farinha,[8] Margaret A. Shipp,[4] Miguel A. Piris,[6] Thomas M. Grogan,[3,10] Stefano A. Pileri,[7] Randy D. Gascoyne,[8] and Teresa Marafioti[2]

[1]Department of Pathology, Brigham & Women's Hospital, Boston, MA, USA; [2]Department of Histopathology, University College Hospital, London, UK; [3]Ventana Medical Systems, Roche Diagnostics, Tucson, AZ, USA; [4]Department of Adult Oncology, Dana-Farber Cancer Institute, Boston, MA, USA; [5]Department of Pathology, Makerere University, Kampala, Uganda; [6]Molecular Pathology Programme, Spanish National Cancer Centre (CNIO), Madrid, Spain; [7]Department of Haematology and Clinical Oncology "L and A Seràgnoli", Bologna University School of Medicine, Bologna, Italy; [8]Department of Pathology, British Columbia Cancer Agency, Vancouver, Canada; and [10]Department of Pathology, University of Arizona, Tucson, AZ, USA

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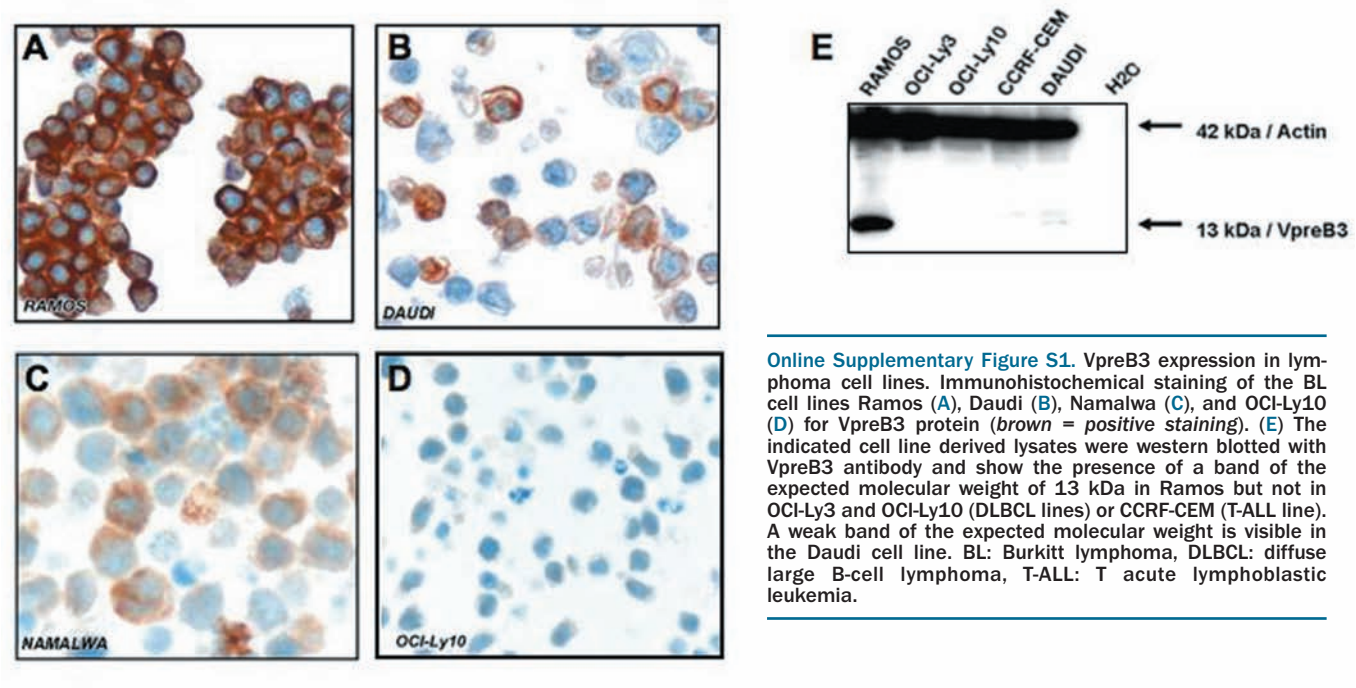
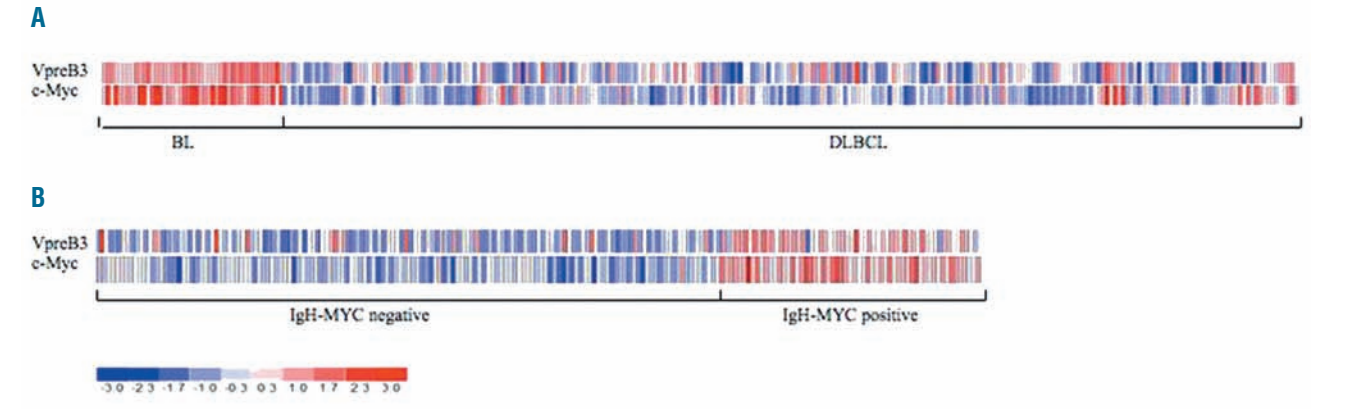
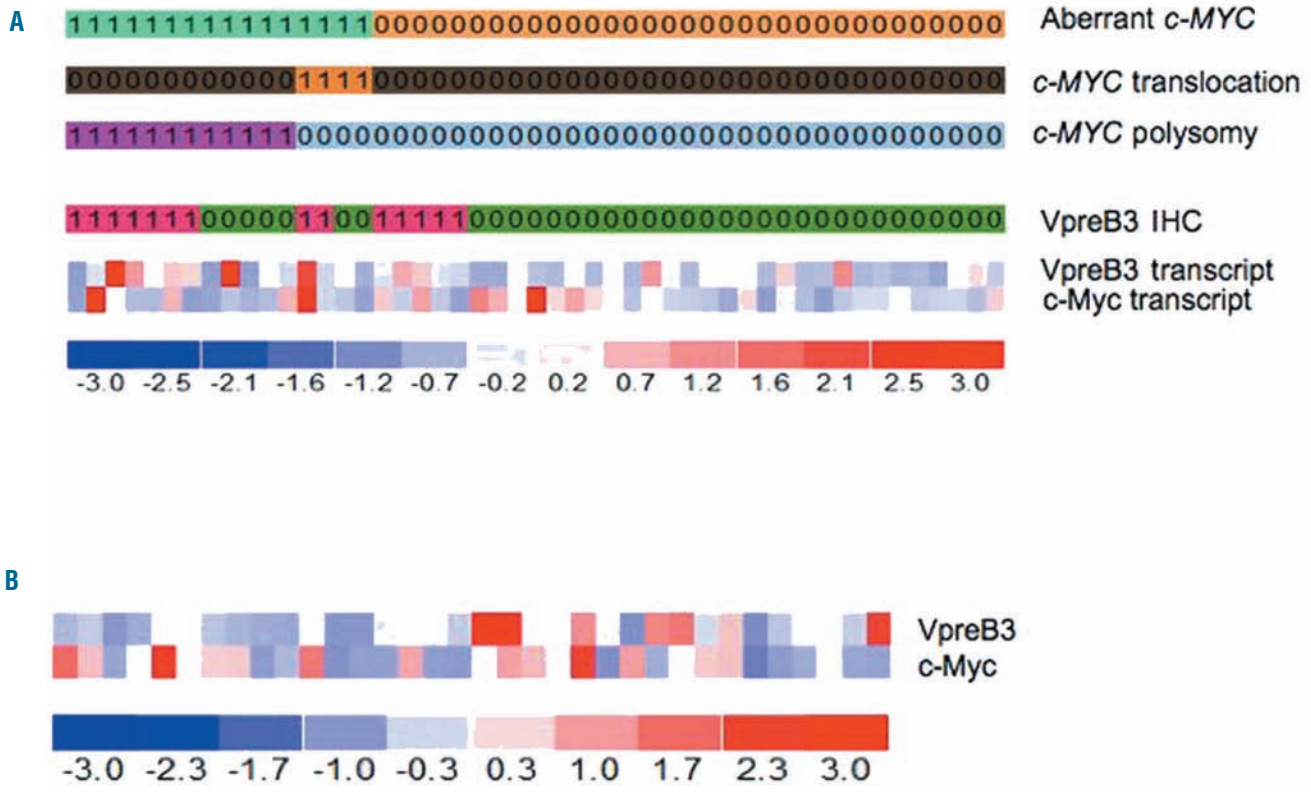


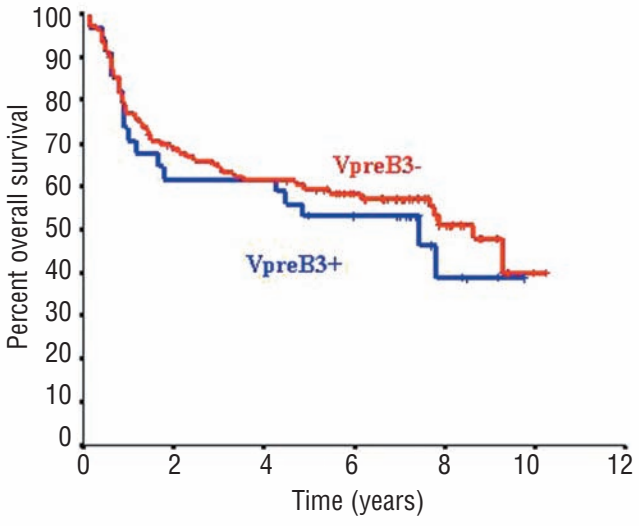
Online Supplementary Figure S1. VpreB3 expression in lymphoma cell lines. Immunohistochemical staining of the BL cell lines Ramos (A), Daudi (B), Namalwa (C), and OCI-Ly10 (D) for VpreB3 protein (*brown = positive staining*). (E) The indicated cell line derived lysates were western blotted with VpreB3 antibody and show the presence of a band of the expected molecular weight of 13 kDa in Ramos but not in OCI-Ly3 and OCI-Ly10 (DLBCL lines) or CCRF-CEM (T-ALL line). A weak band of the expected molecular weight is visible in the Daudi cell line. BL: Burkitt lymphoma, DLBCL: diffuse large B-cell lymphoma, T-ALL: T acute lymphoblastic leukemia.



Online Supplementary Figure S2. The transcript abundance of VpreB3 (top row) and c-Myc (bottom row) of individual cases of BL and DLBCL as determined by gene expression profiling and grouped according to (A) pathological diagnosis and (B) the presence of an *IgH-MYC* fusion. Higher transcript abundance is indicated by *red* and lower transcript abundance is indicated by *blue*. Data derived from Dave *et al.*, 2006[1] (A) and Hummel *et al.*, 2006[2] (B) and annotated using Oncomine.[3]



Online Supplementary Figure S3. (A) The genetic status of *c-MYC* (rows 1-3), immunohistochemical detection of VpreB3 (row 4), transcript abundance of VpreB3 (row 5) and transcript abundance of c-Myc (row 6) for 49 cases of diffuse large B-cell lymphoma.[4] The number *0* indicates that the tumor is negative for the indicated characteristic, and the number *1* indicates that the tumor is positive for the indicated characteristic. (B) The transcript abundance of VpreB3 (top row) and c-Myc (bottom row) for 34 cases of primary mediastinal large B-cell lymphoma as determined by gene expression profiling.[5]



Online Supplementary Figure S4. The overall survival of patients with diffuse large B-cell lymphoma segregated according to the expression of VpreB3 by tumor cells.

Online Supplementary Table S1. Characteristics of cases classified as intermediate DLBCL/BL.

Case #	Original diagnosis	Current diagnosis	Biopsy site	Phenotype	Genetics	Morphology	VpreB3 Immuno histochemisty
1	aBL	int.DLBCL/BL	ovary	CD20+ CD10- Bcl2-	complex kary. with t(8;22)	int.DLBCL/BL	positive
2	aBL	int.DLBCL/BL	neck mass	CD20+ CD10+ Bcl2-	*MYC FISH* +	int.DLBCL/BL	positive
3	aBL	int.DLBCL/BL	ileum	CD20+ CD10- Bcl2-	*MYC FISH* +	resembles BL	positive
4	aBL	int.DLBCL/BL	liver	CD20+ CD10+ Bcl2+	*MYC FISH* +	resembles BL	positive
5	BL-like	int.DLBCL/BL	breast	CD20+ CD10+ Bcl2+	*MYC FISH* +	int.DLBCL/BL	positive

*aBL= atypical Burkitt lymphoma, BL-like= Burkitt-like lymphoma, intermediate DLBCL/BL= B-cell lymphoma unclassifiable, with features intermediate between diffuse large B-cell lymphoma and Burkitt lymphoma. * Original diagnosis based on 2001 WHO classification[6] and Current diagnosis based on 2008 WHO classification.[7]*

Online Supplementary Table S2. VpreB3 expression in lymphoid neoplasms.

Diagnosis	Positive cases	Total cases	% Positive
B-cell tumors[†]			
B lymphoblastic leukemia	4	10	40
CLL/SLL	3	27	11
Mantle cell lymphoma	14	46	30
Follicular center lymphoma			
Grade 1	2	24	8
Grade 2	2	29	7
Grade 3	7	68	10
Marginal zone lymphoma			
Nodal	2	9	22
Extranodal	0	12	0
Splenic	1	11	9
Hairy cell leukemia	0	4	0
PMBCL	3	13	23
T-cell/histiocyte rich B-cell	0	6	0
Plasmacytoma/Myeloma	**0**	**10**	**0**
T-cell tumors			
T lymphoblastic leukemia	0	20	0
PTCL, NOS	0	28	0
AITL	0	16	0
Extranodal NK/T-cell	0	5	0
ALK- ALCL	0	9	0
ALK+ ALCL	0	11	0
Hodgkin lymphoma			
Classical	0	22	0
Nodular lymphocyte predominant	0	15	0

[†]Excluding Burkitt and diffuse large B-cell lymphoma (see Tables 1-2). CLL/SLL= chronic lymphocytic leukemia/small lymphocytic lymphoma, PMBCL= primary mediastinal large B-cell lymphoma, PTCL, NOS= peripheral T-cell lymphoma, not otherwise specified, AITL= angioimmunoblastic T-cell lymphoma, ALCL= anaplastic large cell lymphoma. Staining of at least 25% of tumor cells was necessary to be considered positive.

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