

Supplementary Materials: Safety and Immunogenicity of Combined DNA-Polyethylenimine and Oral Bacterial Idiotypic Vaccine for Patients with B-Cell Non-Hodgkin Lymphoma: A Pilot Study

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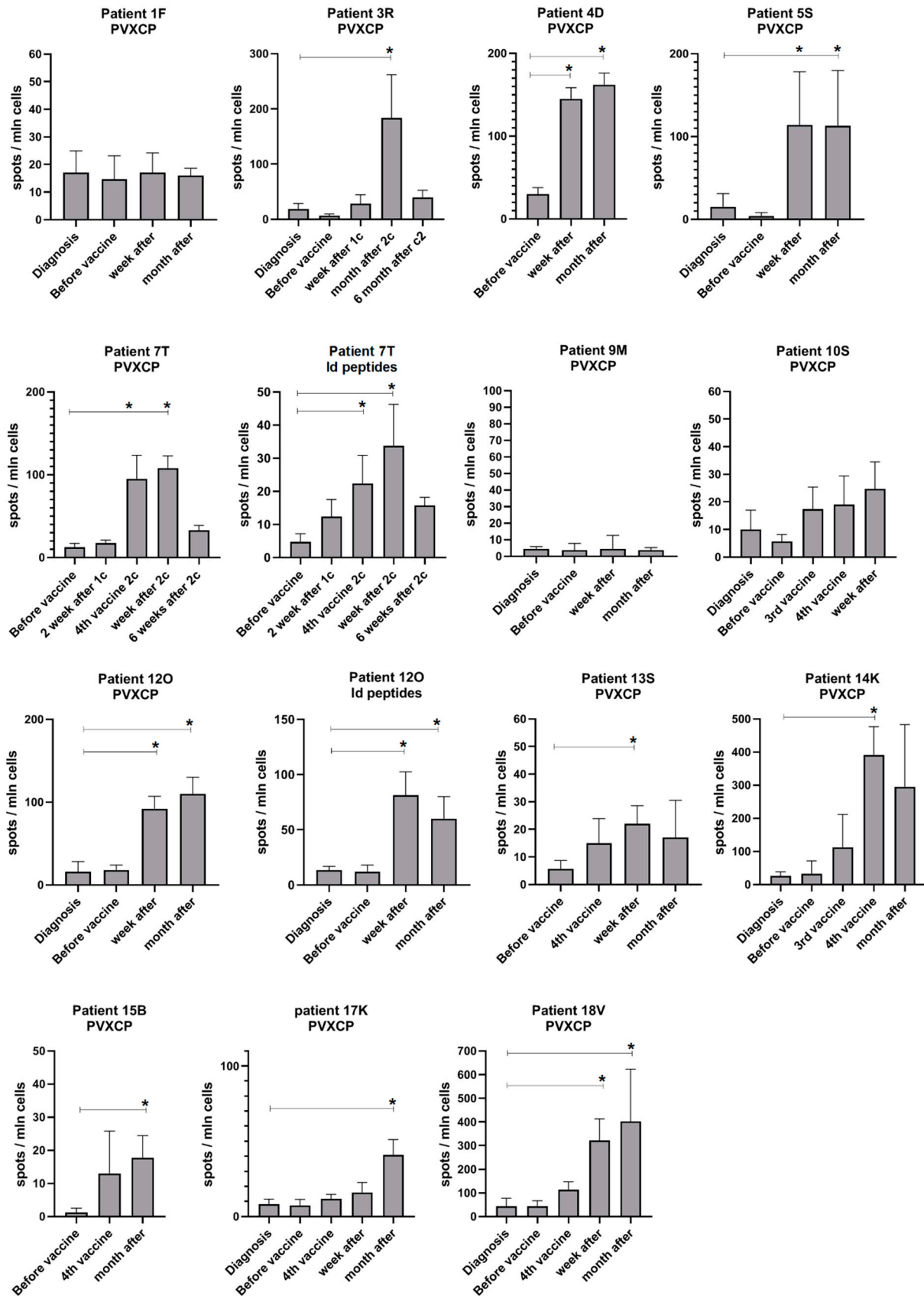
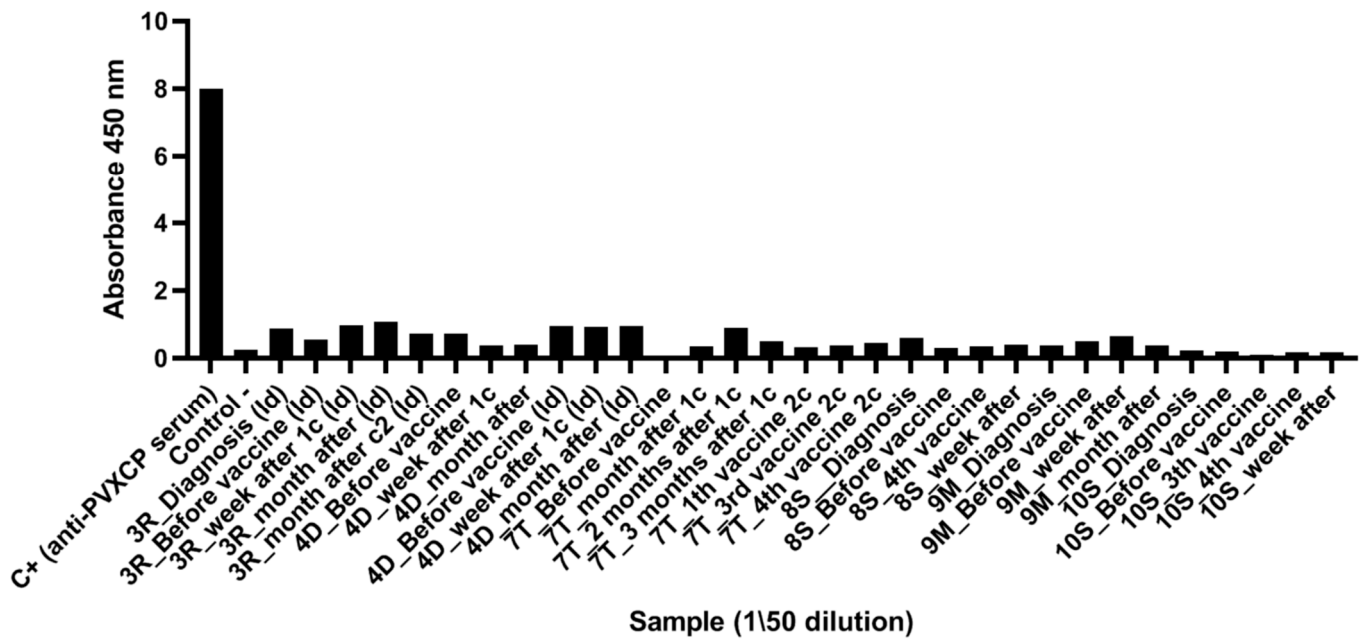


Figure S1. ELISpot test for all patients. 1c—first vaccine course, 2c—second vaccine course (indicated only for patients who have had two courses of vaccination). For some patients, material was available at additional points (on the day of the 3rd or 4th vaccine), these points are also presented in the graph. A significant difference ($p < 0.05$) in the number of spots between time points is indicated by the asterisk (Student's *t*-test).

ELISA patients 3-10



ELISA patients 11-19

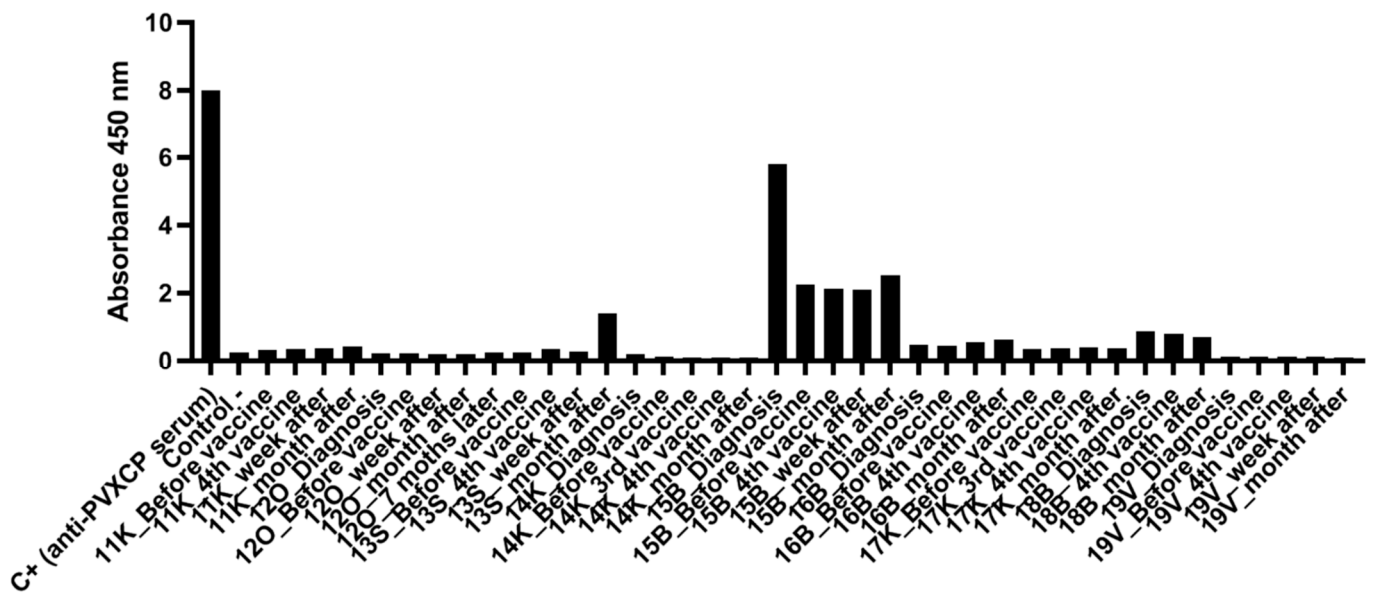


Figure S2. ELISA test for all patients and controls. Id—antigen is the patient's idiotype protein, other samples tested against PVXCP protein. 1c—first vaccine course, 2c—second vaccine course (indicated only for patients who have had two courses of vaccination). Positive control—mouse immune serum, negative control—medium.

Table S1. Sequences of variable regions (idiotypes) of patients' Ig genes included in the study, and the degree of germline homology.

Patient	Idiotype	Sequence	VH/VL Germline
1F	IgM,D	ATGGAAGTGGAGGTTCTCTTTGTGGTGGCAGCAGCTACAGGTGTCCAGTCCCAGGTGCAGCTGGTGCAGTCTGGGGCTG AGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCTGCAAGGCTTCTGGAGGCACCTTCAGCAGCTATGCTATCAGCTGGGTGCG ACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATCATCCCTATCTTTGGTACAGCAAACACGCACAGAAGTTCCAGGGC AGAGTACAGATTACCGCGGACGAATCCACGAGCAGCCCTACATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATT ACTGTGCGAGAGTCCAATCGGCGATTCTTTGGAGTGGTTATTCTTTGGGCTTACTACTACTACATGGACGTCTGGGGCAAGGGAC CACGGTCACCGTCTCCTCA	100%
1F	IgK	GACATCCAGATGACCCAGTCTCCATCTTCCGTGTCTGCATCTGTAGGAGACAGAGTCACCATCACTTGTCTGGGCGAGTCAAGGTA TTAGCAGCTGGTTAGCCTGGTATCAGCAGAAACAGGGAAAGCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTGGCAAAGTGG GGTCCCATCAAGGTTTCAGCGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAGATTTTGCAACT TACTATTGTCAACAGGCTAACAGTTCCCGTGACCTGGGACCAAGTGGATATCAAAC	100%
2K	IgD	ATGAAACACCTGTGGTCTTCTCTCTCTGGTGGCAGCTCCCAGATGGGTCTGTCCCAGGTGCAGCTGCAGGAGTCTGGGGCCAG GACTGGTGAAGCCTTCGGAGACCCGTGTCCTCACCTGCAGTGTCTCTGGTGGCTCCGTGAGCAGTGGTAGTTACTACTGGAGCTG GATCCGGCAGCCCCAGGGAAGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGACCACCACTACAACCCCTCCTCAAG AGTCGAGTACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCTGAAAGTGAAGTCTGTGACCGCTGCGGACACGGCCGTGT ATTACTGTGCGAGA CCGTCTTACCCGAACGACGAGGATGCTTTTGATATCTGGGGCCAAGGGACAATGGTCACCGTCTCTTCAG	99.6%
2K	IgK	TCCTATGTGCTGACTCAGCCACCCTCAGTGTCACTGGCCCCAGGAAAGACGGCCAGGATTACCTGTGGGGGAAACAACATTGGAA GTAAAAGTGTGCACTGGTACCAGCAGAAGCCAGGCCAGGCCCTGTGCTGGTTCATCTATTATGATAGCAGCCGGCCCTCAGGGAT CCCTGAGCGATTCTCTGGCTCCAACTCTGGGAACACGGCCACCCTGACCATCAGCAGGGTGAAGCCGGGGATGAGGCCGACTAT TACTGTCAAGTGTGGGATAGTAGTAGTGATCTTCTTTGGTGTCTCGGCGAGGGACCAAGCTGACCGTCTCTA	100%
3R	IgM,D	ATGAAACATCTGTGGTCTTCTCTCTCTGGTGGCAGCTCCCAGATGGGTCTGTCCCAGGTGCAGCTGCAGGAGTCTGGGGCCAG GACTGGTGGAGCCTTCGGAGACCCGTGTCCTCACCTGCAGTGTCTTCTGGTGGCTCCATGAGTGGATACTACTGGAGCTGGATGCG GCAGTCCCCAGGGAAGGGACTGGAGTGGATTGGATATATCTATTACAGTGGGACCACCGACTACAACCCCTCCTCAAGAGTTCGA GTCACCATATCAGTGGACACGTCCAAGAATCAGTTCTCCTGAAGTTGAGCTCTGTGACCGCTGCGGACACGGCCGTCTATTACT GTGCGAGAGA CCGCCCTATGAAGTATAGTAGTTTGTGAGGTACTACTATTACGGCATGGACGTCTGGGGCCAAGGGACCGCGGT CACCGTCTCCTCAG	94.74%
3R	IgK	GACATCCAGATGACCCAGTCTCCATCTCTCCTGTCTGCATCTGTAGGAGACAGAGTCACCATCACTTGCCTGGGCAAGTCAAGCA TTAGCAGTTATTTAAATTGGTATCAGCAAATACGAGGGAAGCCCTAAGCTCCTGACTTATGCTGTACCACTTTGGCAAAGTGG GGTCCCATCAAGGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTCTACAACCCGAAGACCTTGCAACT TACTATTGTCAACAGACTTACAGTACCCCGTGAGCGTTTCGGCCAAAGGACCAAGGTGGAAATCAAAC	94.62%
4D	IgM,D	ATGGAAGTTTGGGCTGAGCTGGCTTTTCTTGTGGCTAAAATAAAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAG GCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCTGTGCAGCCTCTGGATTCTCCTTTAGCAGCTATGCCATGACCTGGGTCCG CCAGGCTCCAGGGAAGGGCTGGAGTGGGTCTCAGCTATAAGTGGTAGGTGCTAGCACATACACGAGCTCCGTGAGGGGC CGGTTACCATCTCCAGAGACAATTCCAATAAACACGCTTTATCTGCAAAATGACAGCCTGAGAGCCAGGAGACACGGCCGTATATT ACTGTGCGAA GATCCCGACGGTGACTA ACTACTCTGGACTCTGGGGCCAGGGACCCCTGGTCACCGTCTCCTCAG	97.57%
4D	IgK	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTAGGAGACAGAGTCACCATCACTTGCCTGGGCGCAGTCAAGTA TTAGTAGCTGGTTGGCCTGGTATCAGCAGAAACAGGGAAAGCCCTGAGCTCCTGATTTATAGGGCGTCTACTTTACAAAGTGG GGTCCCATCAGCTTTTCAGCGGCAGTGGATCTGGGACAGAACTCACTCTCACCATCAGTGCCTGCAGCCTGATGATTTTGCAACT TATTACTGCCAACAGATATAATAGTTATTACTACTTTTCGGGCGAGGGACCAAGGTGGAGATCAAAC	97.13%
5S	IgG	ATGGAAGTTTGGGCTGAGCTGGGTTTCTTGTGTGCTATTTTAAAAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAG GCTTGGTCCAGCCTGGGGGGTCCCTGAGACTCTCTGTGCAGCCTCTGGATTCTCCTTTGGTGGCTATTGGATGACCTGGGTCCG CCAGGCTCCAGGGAAGGGCTGGAGTGGGTGGCCAAACATAAACCAAGATGGAAGTGACAAATACTATCTGGACTCTGTGGGAGGC CGATTCCACATCTCCAGAGACAGCGCCAAGAACTCCCTGTATCTGCAAAATGAACAGCCTCAGAGCCGAGGACACGGCCATATATT ACTGTGCGAGAG CCGAAGATTGTAGACTATAGCAGCAGTGCTCTGGGGCCAGGGGACCCAGGTCAACCGTCTCCGCAC	95.49%
5S	IgL	CAGCCGCCCTCGGTGTCACTGTCCCGAGGACAAACCGGCCAGGATCACCTGCTCTGGAGATGCATTGCCAAAAAATTTGCTTATT GGTACCAGCAGAGGTCAAGCCAGGCCCTGTGCTGGTCACTATGAGGACAGTAAGCGACCCTCCGGGATCCCTGAGAGATTCTC TGGTCCAGCTCAGGGACATGGCCACCTTGACTATCAGTGGGGCCACGTGGAGGATGAAGCTGACTACTATTGTATTACTCAACA GACAGCAGTGGTAATCAT TGGGTGTTTCGGCGAGGGACCAAGCTGACCGTCTCA	97.35%
6L	IgM,D	ATGGAAGTGGACCTGGAGGATCCTCTGCTTGGTGGTGTAGCTCCAGGTGTCACTCCCAGGTGCAGCTGGTGCAGTCTGGGGCTG AGGTGAAGAAGCCTGGGGCTCAGTGAAGGTTTCTGCAAGGCATCTGGATACACCTTCACCAGCTACTATATGCACTGGGTGCG ACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAATAATCAACCTAGTGGTGGTAGCACAAAGCTACGCACAGAAGTTCCAGGGC AGAGTACCATGACCAGGGACACGTCCACGAGCAGTGTACATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATT ACTGTGCGAGAGA GTATCCCTTAGTAGTACCAGCTGTATATACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCAC GGTCACCGTCTCCTCAG	100%
6L	IgK	TCATCACCACGATATTGTGATGACCCAGACTCCACTCTCCTGCCCCTGACCCCTGGAGAGCCGGCTCCATCTCTGCAGGTCT AGTCAGAGCCTCCTGCATAGTAATGGATACAACTATTGGATTGGTACCTGCAGAAGCCAGGGCAGTCTCCACAGCTCCTGATCT ATTTGGGTTCTAATCGGGCTCCGGGGTCCCTGACAGGTTTCAGTGGCAGTGGATCAGGCACAGATTTTACTACTGAAATCAGCAG AGTGGAGGCTGAGGATGTTGGGGTTATTACTGATGCAAGCTCTACAACTCCTCCATTCACTTTTCGGCCCTGGGACCAAGGTG GATATCAA	99.33%
7T	IgM	ATGGAAGTGGACCTGGAGGTTCTCTTTGTGGTGGCAGCAGCTACAGGTGTCCAGTCCCAGGTGCAGCTGGTGAATCTGGGGCTG AGTTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCTGCAAGTCTTCTGGAGACACTTTCAACAAGTATGCTTTAAGTTGGCTGCG ACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAAGCATCATCCCTCTCCTTGGTACTGCAAATTACGCACAGAATTCAGGGC AGGCTCACGATTACCGCGGACAAATCCACGAGTACAACCTATTTGGAATTGAAGAGCCTGCGATTGAAGACACGGCCGTATATT ACTGTGCGAGAG GGTGGT CAGGACTGGGACGGCTCCGATTCACTACTGGGGCCAGGGAACCTGGTCAGCGTCTCCTCA	89.24%
7T	IgK	GAAATTGTGTTGACGCAGTCTCCAGGACCCTGTCTTTGTCTCCAGGGGAAAGGGCCACTCTCTCCTGCAGGGCCAGTCAAGTG TTAGTGCCAACTCTTTAGCCTGGTACAGCAAAAACCTGGCCGGCTCCAGGCTCCTCATCTATGGTGCATTCAGCAGGGCCAC TGGCATCCCAGACAGGTTTCAGTGCCAGTGGGTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAGATTTTGTA GTGTATTACTGTGACACTATGGTAGTTCACTCGGACGTTTCGGCCAAGGGACCAAGGTGGAAATCAAAC	94.33%

8S	IgM	ATGGAGTTTGGGCTGAGCTGGCTTTTCTTGTGGCTAAAAATAAAGGTGTCCAGTGTGAGGTGCAGATGTTGGAGTCTGGGGGAG GCTTGTATACAGCCGGGGGGTCCCTGAGACTCTCCTGTGAAGCCTCTGGATTACCTTTAGCAGCTATGCCATGAGTGTGGGTCCG CCAGGCTCCAGGGCAGGGGCTGGAGTGGGTCTCCGGTATCAGCAGTAGTGGTGGGACCACATACTACACAGACTCCGTGAAGGGC CGGTTACCATCTCCAGAGACAATACCAAGAACACTTTATATCTGGAAATGAAGAGGCTGAGAGTGCAGGACACGGCCTTATATT ACTGTTCAAAGA TCAGGCGCAACA CTCTTACTAGTTTCCCTTAGTTACTGGTATTT CGATCTCTGGGGCCGCGCACCTGGT CACTGTGTCTCTAG	92.01%
8S	IgK	GCCATCCGGATGACCCAGTCTCCATCCTCATTCTCTGCGTCTTCAGGAGACAGAGTCAACATCACTTGTCTGGGCGAGTCAAGGTA TTAGCAGTTACTTTGGCCTGGTATCAGCAAAAATTAGGGGAGGCCCCCTAAACTCCTGATCTATTCTGCATCCACTTTGCAAAGTGG GGTCCCATCAAGGTTTCAGCGGCAGTGGCTCTGGGACAGATTTCACTCTCACCATCAGCTGCCTGCAGTCTGAAGACTTTGCAACT TATTACTGTCAACAGTATTATAGTTACCC ACTCACTTTCGGCGGAGGGACCAACATTGACATCAAAC	95.34%
9M	IgM	ATGGACTGGACCTGGAGGTTCTCTTTGTGGTGGCAGCAGCTACAGGTGTCCAGTCCCAGGTGCAGCTGGTGCAGTCTGGGGCTG AGGTGAAGAACCTGGGTCTCGTGGAAGGTCTCCTGCAAGGCTTCTGGAGGCACCTTCAGCAGCTATGCTATCAGCTGGGTGCG ACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATCATCCCTATCTTTGGTACAGCAAACTACGCACAGAAGTTCAGGGC AGAGTCACGATTACCGCGGACGAATCCACGAGCACAGCCTTACATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCTGTATT ACTGTGCGAG CGTCGAGGTACCTGGAATACGTTACGCTTGACTACTGGGGCCAGGGAACCTGGTCACCGTCTCTCTAG	100%
9M	IgL	CAGTCTGTGCTGACTCAGCCACCCTCAGCGTCTGGGACCCCCGGGCAGAGGGTCACCATCTCTTGTCTGGAAGCAGCTCCAACA TCGGAAGTAATTATGTATACTGGTACCAGCAGCTCCAGGAACCGCCCCAAACTCCTCATCTATAGGAATAATCAGCGGCCCTC AGGGGTCCCTGACCGATTCTCTGGCTCCAAGTCTGGCACCTCAGCCTCCCTGGCCATCAGTGGGCTCCGGTCCGAGGATGAGGCT GATTATTACTGTGCGAGCATGGGATGACAGCTGAGTGGT CGGTGTTTCGGCGGAGGGACCAAGCTGACCGTCTCTAG	98.92%
10S	IgM,D	ATGAAACACCTGTGGTCTTCTCTCTCCTGGTGGCAGCTCCAGATGGGTCTCTGCCAGGTGCAGCTACAGCAGTGGGGCGCAG GACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGTGTCTATGGTGGGTCTTCAGCGGTTACTACTGGAGCTGGATCCG CCAGTCCCCAGGGAAGGGGCTGGAGTGGATTTGGGAAATCAATCATAGTGAAGCACCAACTACAACCCGTCCTCAAGAGTCGA GTCACCATATCAGTAGACACGTCCAAGAATCAGTTCTCCCTGAACTGAGGTCTGTGACCGCCGCGGACACGGCTGTGTATTACT GTGCGAGA CCGTTCGACTATGACAGCCCTTTGTGGAATGGGCGCAGGGAACCTGGTCACCGTCTCTCTAG	97.98%
10S	IgK	GACATCCAGATGACCCAGTCTCCATCCTCCTGTCTGCTCTGTAGGAGACAGAGTCAACATCACTTGCCGGGCAAGTCAGGGCA TTAGAAATGATTTAGGCTGGTTTTCAGCAAAAACAGGGAAGCCCCCTAAGCGCCTCATCTATGCTGCATCCACTTTGCAAACCTGG GGCCCCATCGAGGTTTCAGCGGCAGTGGATCTGGGACAGAAATTCATCTTACAATCACCAGCCTTCAGCCTGAAGATTTTGCAACT TATTACTGTCTACAAATATAATCATTTACCCTC GGACGTTTCGGCCAAAGGGACCAAGTGGAGATCAAAC	94.98%
11K	IgD,M	ATGAAACACCTGTGGTCTTCTCTCTCCTGGTGGCAGCTCCAGATGGGTCTCTGCCAGGTGCAGCTGCAGGAGTCGGGGCGCAG GACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGTGTCTATGGTGGGTCTTCAGTGGTTACTACTGGAGCTGGATCCG CCAGCCCCCAGGGAAGGGGCTGGAGTGGATTTGGGAAATCAATCATAGTGAAGCACCAACTACAACCCGTCCTCAAGAGTCGA GTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACT GTGCGAGAGG AGGCTATGATAGTAGTGGTTATCCAATAGCTTTTGATATCTGGGGCCAAGGGACAATGGTCACCGTCTCTCTAG	98.95%
11K	IgL	CAGGCTGTGCTGACTCAGCCGTCTTCCCTCTCTGCATCTCCTGGAGCATCAGCCAGTCTCACCTGCACCTTACGCAGTGGCATCA ATGTTGGTACCTACAGGATATACTGGTACCAGCAGAAGCCAGGGAGTCTCCTCCAGTATCTCCTGAGGTACAATCAGACTCAGA TAAGCAGCAGGGCTCTGGAGTCCCCAGCCGCTTCTGTGGATCCAAAGATGCTTCGGCCAAATGCAGGGGATTTTACTCATCTCTGGG CTCCAGTCTGAGGATGAGGCTGACTATTACTGTATGATTTGGCACAGCAGCGTT GGGTATTTCGGCGGAGGGACCAAGCTGACCG TCCTAG	100%
12O	IgM	ATGAAACACCTGTGGTCTTCTCTCTCCTGGTGGCAGCTCCAGATGGGTCTCTGCCAGGTGCTTCTACAGCAGTGGGGCGCAG GTCTGTTGAAGCCTTCGGAGACCCTTGTCCCTCACTTGCCTGTCTATGGTGAAGTCTTCAGTACTTCCCACTGGAGCTGGATCCG CCAGCCCCCAGGGAAGGGGCTGGAGTGGATTTGGGACAGATCAATCATAGTGAAGCACCAACTACAACCCGTCCTCAAGAGTCGA GTCACCATATCAATTGACACGTCCAAGAAGCAGTTTCTCCCTGAAGCTGAGCTCCGTGACCGCCGCGGACACGGCTCTTTATTATT GTGCGGGA AAGGGAACATCTATAGGCCCTTGACTACTGGGGCCAGGGAACCTGGTCACCGTCTCTCTAG	91.93%
12O	IgK	GAAATTTGTGTTGACACAGTCTCCAGGCACCTGTCTTTGTCTCCAGGGGAAGAGGCACCTCTCCTGCAGGGCCAGTCAAGTG TTAACAGCACCTACTTAGCCTGGTACCAGCAAAACCTGGCCAGGCTCCCAGGCTCCTCATCTCTGGTGCATCCACAGGGCCAC TGGCATCCAGACAGGTTTCACTGGCAGTGGGTCTGGGACAGGCTTCACTCTCACCATCAGCAGACTGGAGCTGAAGATTTTGCA GTGTATTACTGTGACAGTGTGGTAATTACC GTGCACTTTTGGCCAGGGGACCAAGCTGGACATCAAAC	96.1%
13S	IgG	ATGGACACACTTTGCTCCACGCTCCTGTGCTGACCATCCCTTCATGGGTCTTGTCCAGATTACCTTGAAGGAGTCTGGTCTCTA CGCTGGTGAAGCCACACAGACCCTCACACTGACCTGCACCTTGTCTGGGTCTCTGCTCACCACCTCATGGAGTGGGTGTGGGCTG GATCCGTCACCCCCCGGAAAGGCCCTGGAATGGCTTGCCTCATCTATTGGGATAATGATAAGCGCTACAGCCCCCTCTCTGAAA AAAGACTCGCCATCGCCACAGACACGTCCAAAAACAGCAGTGGTCTTCCGAATGACCGACATGAGCCCTCTGGACACAGGCACAT ATTATTGTGCCACAGAC ACGTGGATCGGTACTTCGATGTCTGGGGCCGTGGCGCCCTAGTTTCTGTCTCTCTAG	89.96%
13S	IgK	GACATCGTGATGACCCAGTCTCCAGGCTCCCTGTCTTTGTCTCTGGGCGCGACGGCCACCATCACCTGCAAGGCCAGTGGACTA TCTTGTCCACCTCCAATAATAAGACTTACTTAGCCTGGTACCAAGCTAAACGAGGACGGCCTCCAAGATTACTCTTTTATTGGGC GTCTAACCGACACTCCGGGGTCCCTGACCGATTAGTGGCAGCGCTTCTGGAACGCATTTTCGCTCTCACCATAAGGAACGTGCAG GCTGAAGATGTGGCAGATTATTACTGTGACCAATAATAGTACTCC GTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAGC	82.49%
14K	IgM	ATGGAGTTTGGGCTGAGCTGGCTTTTCTTGTGACTACTTTAAAGGTGTCCGGTGTGAGGTGCAGTTATTGGAGTCTGGGGGAG GCTTGGTTCAGCCGGGGGGTCCCTCAGACTCAGCTGCGCAGCCTCTGGATTCACTTTTAATAAATTATGCCATGAGTGGGTCCG CCAGTTTCCAGGGAAGGGGCTGGAGTGGGTCTCCACTATCAGTGGCACTGGTACTAGAACATTCTTCTCAGACTCCGTGACGGGC CGCTTCAACATTTCTAGAGACAATGACAGGAACACGGTGTCTCTACAAATGAACCTCCTGAGAGTGCAGGACACGGCCGTCTATT TCTGTGCGAA GAATTCGTGCGGACGTGGTATCTTCTGTCTGGTGGACAGAGCGCGCTGAATATTTCCACCCTGGGGCT GGGCACTCTGGTCACTGTCTCTCTAG	85.76%
14K	IgK	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGACTG TTTTATACAACCTCCAACAATAAAAACTACTTAGCTGGTACCAGCAGAAACAGGACAGCCTCCTAAGCTGCTCATTTTACTGGGC ATCTACCCGGGAATCCGGGGTCCCTGACCGTTTTCAGTGGCAGCGGTCTGGGACAGATTTCACTCTCACCATCAGCAGCCTGCAG GCTGAAGATGTGGCAGTTTATTACTGTGACCAATATTATAATACTCC GTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAAC	97.87%
15B	IgM	ATGGAGTTTGGGCTGAGCTGGGTTTCTTGTGTACTATTATAAAGGTGTCCAGTGTGAGGTGCAGTGGTGGAGTCTGGGGGAG GCTTGGTCAAGCCTGGAGGGTCCCTGAGACTCTCTTGTGTAGCCTCTGGATTACCTTCAGTGACTACCATATGAGTGGATCCG CCAGGCTCCAGAGGGGGGCTGGAGTGGCTTCAAACATTAGTAGGAGTGGTGACACCATCAACTACGCAGACTCTGTCAAGGGC CGATTTATCATCTCCAGGACAACGCCAGGAATTCATTGTTTCTGCAATGAACAGCCTGAGAGGCGAAGACACGGCCGTCTATT ACTGTGCGAG GGGCGTTGGTTCGGTGGACTACTGGGGCCAGGGAACCTGGTCACCGTCTCTCTAG	90.97%

15B	IgK	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTGGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCACGACA TTAGAAATGATTTAGGCTGGTATCAGCAGAAACCAGGAAAGCCCTAAGCGCCTAATCTACGCTGCATCTAGTTTGCAAAGTGG GGTCCCATCAAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACCTCTCACAATCAGCAGCCTGCAGCCTGAAGATTTTGCAACT TATTTCTGTCTACAGCATGATAGTTATCCTC GCAC TTTCGGCC CAAGGGACACGACTGGACATTAACC	96.58%
16B	IgM	CAGGTGCAGCCACAACAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCCTGTCCCTCACCTGCGCTGTCTATGGTGGGTCCC TCAGTGGCTTCTTGTGGAGCTGGGTCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGAGAAATCAATTATAGTGGAAGTAC CAACTACAATCCGTCCCTCAAGAGTCGAGTCACCATATCAGCAGACATGTCCAAGAACCAGTTCTCCCTGAAGTTGAACTCTGTG ACCGCCGCGGACACGGCTGTTTACTACTGTGCG CCCGCGGT TGGGGGGTCTTGACTCCTGGGGCCAGGGAACCTTGGTCACCG TCTCCTCAG	94.04%
16B	IgK	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTG TTACTAACAGCTACTTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCAC TGGCATCCAGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAGATTTTGCA GTGTATTACTGTGCAGCAATATGTTAGCCCACTC GGACGTTTCGGCCAAGGGACCAAGGTGGAAATCAAAC	98.58%
17K	IgM	GTGCAGCTGGTGCAGTCTGGACCAGAGGTGAAAAAGCCCGGGGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACAGCTTTA CCACCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGAAAGGCCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGATAC CAGATACAGCCCGTCCTTCCAAGGCCAGGTCACCATCTCAGCCGACAAGTCCATCAGTACCGCTACCTGCAGTGGAGCAGCCTG AAGGCCTCGGACAGCGCCATGTATTACTGTGCGAGACA GTCTGGGGGTCTTGACTACTGGGGCCAAGGGACCCCTGGTCACCGTCT CCTCAG	98.60%
17K	IgK	GAGGTGCAGCTGGTGCAGTCTGGACCAGAGGTGAAAAAGCCCGGGGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACAGCT TTACCACCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGAAAGGCCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGA TACCAGATACAGCCCGTCCTTCCAAGGCCAGGTCACCATCTCAGCCGACAAGTCCATCAGTACCGCTACCTGCAGTGGAGCAGC CTGAAGGCCTCGGACAGCGCCATGTATTACTGTGCGAGACA GTCTGGGGGTCTTGACTACTGGGGCCAGGGAACCTTGGTCACCG TCTCCTCA	98.61%
18B	IgM	GAGCTGGTTTCCTTGTGTTTTGTAGCAGGTGTCCAGTGTGAGGTGTATTTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCTGGGT CGTCCCTGAGACTCTCATGTGCAGCCTCTGGATTATCTTTAATGACTTTTGGATGAGTTGGGTCCGCCAGGCTCCAGGGAAGGG ACTGGAGTGGGTGGCCAAATATAAATCAAGATGGACTTGAAAGCATTATCTGGACTCTGTGAAGGGTCGATTTCATCATATCCAGG GACAAACACCAAGAGTTGTCTCTTTCTTCAAATGAACAACCTTGAGAGTTCGAGGACACGGCTAAATATTATT TCAGTGCCGGGACT TCTTTGACTTCTGGGGCAAGGGAATCCTGGTCAGCGTCTCGTCAG	85.42%
18B	IgL	CAGTCTGTCTGTGACGCAGCCGCCCTCAGTGTCTGGGACCCCGGACAGACGGTCAGCATCTCTTGCTCTGGAAGCACTTCCAACA TCGCAACTAATACCGTAAACTGGTACAGGCAAGTCCAGGGACGGCCCCCAAACCTCCTCATCTACACTAATGATCAGCGGCCCTC AGGAGTCACTGACCGATTCTCTGGCTCCAAGTCTGGCACCTCAGGATCCCTGGACATCAGTGGACTCCAGTCTGACGATGAGGCT GATTATTTTGTGACGCGTGGGAT AGTGA CCTGAGTGG ATGGCTTTTCGGCGGAGGGACAGGCTGACCGTCCTAG	87.02%
19V	IgG	ATGGAGTTTGGGCTGAGCTGGCTTTTCTTGTGGCTAAAAATAAAAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAG GCTTGGTACAGCCTGGGGGTCCCTGAGACTCTCATGTGGAGGCTCTGGATTACCTTTAGTATGTTTCGCCATGACCTGGGTCCG CCAGGCCCCGGGGAAGGGACTGGAGTGGGTCTCGACTATTTCTCGTGATGGAGCGTCCACATCATACGCAGACTCCGTGAAGGGC CGGTTACCATCTCCAGAGACAACGCCAAGAACACCTTATGTCTGCAAAATGAACAGCCTGAGAGTGAAGACACGGCCGTCTATT ATTGTACGAA GTGCGCGTATTTCACCAAGTTGCTTGCGGTCCCTCAATATTTCACCGT TGGGGCCAGGGCACCTGGTCAACGT CTTCTCAG	87.50%
19V	IgL	TCCTATGTGCTGACTCAGCCACCCTCGGTGTGAGTACCCAGGAAAGACGGCCAAGATTCCCTGTGGGGGACATAAACTTGGAG GTGAAAGTGTCCACTGGTACCAGCAGATGCCAGGCCAGGCCCTGTGTTGGTCATCCATGATGACACTGAGCGGCCCTCAGGGAT CCCAGACCGATTCTCTGGCTCCAAGTCTGGGAGCACGGCCACCCTGACCATCAGCAGGTCGAGGCCGGGATGAGGCCGACTAT TTTTGTGAGGTGTGAATACTACTCGTGATCAT CGGGTTCGGCGGAGGGACCAAGCTGACCGTCCTTG	89.61%

Variable gene segment (VH, Vk, VL) are green, joining (J) are blue, non-template or N(D)N – red.

Table S2. Idiotypic peptides for patients 7T and 12O, used in study.

Peptide	Sequence
7T_VH_39	V S C K S S G D T F N K Y A L
7T_VH_62	Q G P E W M G S I P L L G T
7T_VH_97	T T Y L E L K S L R F E D T A
7T_VH_117	R G W S G T G T A S G F N Y W
7T_Vk_186	A S Q S V S A N S L A W Y Q Q
7T_Vk_198	Y Q Q K P G R P P R L L I Y
7T_Vk_207	R L L I Y G A F S R A T G I P
7T_Vk_248	Y Y C Q H Y G S S P R T F G Q
12O_VH_20	Q V L L Q Q W G A G L L K P S E T L
12O_VH_42	A V Y G E S F S T S H W S W
12O_VH_66	W I G D I N H S G I T K Y N P
12O_VH_85	R V T I S I D T S K K Q F S L
12O_VH_113	Y C A G K G N I Y G P L D Y
12O_VH_120	I Y G P L D Y W G Q G T L V T
12O_Vk_46	R L L I S G A S T R A T G I
12O_Vk_86	V Y Y C Q Q C G N S P C T F G Q

Germline VH/Vk sequence is green, JH/Jk is blue, non-template—red.