

**YMTHE, Volume 26**

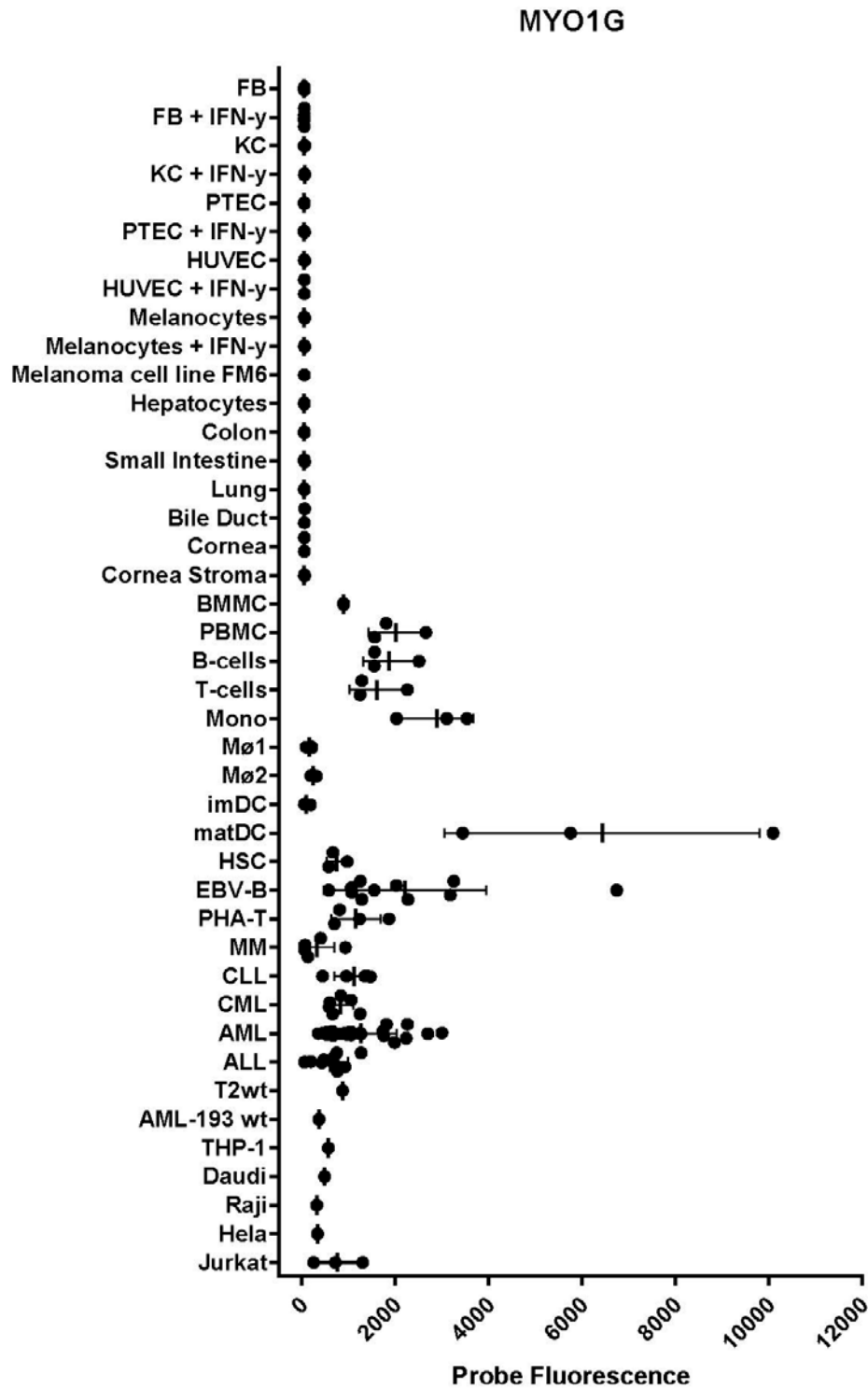
## **Supplemental Information**

### **Preclinical Strategies to Identify Off-Target**

#### **Toxicity of High-Affinity TCRs**

**Helena M. Bijen, Dirk M. van der Steen, Renate S. Hagedoorn, Anne K. Wouters, Linda Wooldridge, J.H. Frederik Falkenburg, and Mirjam H.M. Heemskerk**

**Supplementary Figure 1: Gene expression profile for minor histocompatibility antigen HA-2 (MYO1G).** Probe fluorescence intensity is shown on the x-axis in logarithmic scale. On the y-axis malignant and healthy (non-)hematopoietic cell types are shown. Each dot represents a different sample and the mean and standard deviation of gene expression is shown for each cell type.



**Supplementary Table 1: Potential cross-reactive human self-protein derived peptide targets of the 7B5 T-cell clone.** The peptides in this table are selected based on their predicted recognition by the 7B5 T-cell clone according to a CPL-driven search of the human self-protein database conducted using the WSBC PI CPL webtool.

Output score	Peptide	Protein
-16,869723	NVGEVYGVV	gi 34577063 ref NP_001117.2  adenylosuccinate synthetase isozyme 2
-16,869723	NVGEVYGVV	ADENYLOSUCCINATE SYNTHETASE ISOZYME 2 HOMO SAPIENS
-16,930872	SVGSVLLTV	gi 333944015 ref NP_001207417.1  cadherin-13 isoform 2
-16,930872	SVGSVLLTV	gi 4502719 ref NP_001248.1  cadherin-13 isoform 1 preproprotein
-16,930872	SVGSVLLTV	gi 333944018 ref NP_001207418.1  cadherin-13 isoform 3 precursor
-16,930872	SVGSVLLTV	gi 333944020 ref NP_001207419.1  cadherin-13 isoform 4
-17,220057	SVGEVIEVL	gi 7662482 ref NP_055723.1  dolichol kinase
-17,281433	YIGEVLSV	gi 239582755 ref NP_149043.2  myosin-Ig
-17,281433	YIGEVLSV	sp B0I1T2-4 MYO1G_HUMAN Isoform 4 of Unconventional myosin-Ig OS=Homo sapiens GN=MYO1G
-17,281433	YIGEVLSV	sp B0I1T2-2 MYO1G_HUMAN Isoform 2 of Unconventional myosin-Ig OS=Homo sapiens GN=MYO1G
-17,281433	YIGEVLSV	sp B0I1T2-3 MYO1G_HUMAN Isoform 3 of Unconventional myosin-Ig OS=Homo sapiens GN=MYO1G
-17,353998	TVGELLVTI	gi 156938343 ref NP_055874.2  talin-2
-17,374766	NSGEVIVTL	gi 41393559 ref NP_904325.2  kinesin-like protein KIF1B isoform alpha
-17,374766	NSGEVIVTL	gi 41393563 ref NP_055889.2  kinesin-like protein KIF1B isoform b
-17,374766	NSGEVIVTL	Kinesin-like protein KIF1B Homo sapiens
-17,374766	NSGEVIVTL	sp O60333-4 KIF1B_HUMAN Isoform 4 of Kinesin-like protein KIF1B OS=Homo sapiens GN=KIF1B
-17,374766	NSGEVIVTL	sp O60333 KIF1B_HUMAN Kinesin-like protein KIF1B OS=Homo sapiens GN=KIF1B PE=1 SV=5
-17,392979	LVGFVLLTV	gi 22749415 ref NP_689926.1  dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit STT3A
-17,501319	WGGEVLIVA	gi 156564359 ref NP_212134.3  riboflavin transporter 2
-17,795412	GVGEVLHVK	gi 209954788 ref NP_001129625.1  cyclic AMP-dependent transcription factor ATF-6 beta isoform b
-17,795412	GVGEVLHVK	gi 20631977 ref NP_004372.3  cyclic AMP-dependent transcription factor ATF-6 beta isoform a
-17,821511	TTGEVVVTM	gi 35493860 ref NP_919304.1  otoferlin isoform d
-17,821511	TTGEVVVTM	gi 35493868 ref NP_004793.2  otoferlin isoform b
-17,840203	SGGEVIFTK	sp Q9Y334-2 VWA7_HUMAN Isoform 2 of von Willebrand factor A domain-containing protein 7 OS=Homo sapiens GN=VWA7
-17,840203	SGGEVIFTK	gi 153945852 ref NP_079534.2  protein G7c precursor
-17,891018	KVGEVIVTK	gi 41399285 ref NP_955472.1  60 kDa heat shock protein, mitochondrial
-17,898825	FVGEDLVTI	sp Q9Y5Z0-4 BACE2_HUMAN Isoform 4 of Beta-secretase 2 OS=Homo sapiens GN=BACE2
-17,898825	FVGEDLVTI	gi 21040360 ref NP_620476.1  beta-secretase 2 isoform C preproprotein
-17,898825	FVGEDLVTI	Beta-secretase 2 Homo sapiens
-17,898825	FVGEDLVTI	gi 21040362 ref NP_620477.1  beta-secretase 2 isoform B preproprotein
-17,898825	FVGEDLVTI	sp Q9Y5Z0-5 BACE2_HUMAN Isoform 5 of Beta-secretase 2 OS=Homo sapiens GN=BACE2
-17,898825	FVGEDLVTI	gi 19923395 ref NP_036237.2  beta-secretase 2 isoform A preproprotein
-17,901998	STGEVVVTM	sp Q9HC10-5 OTOF_HUMAN Isoform 5 of Otoferlin OS=Homo sapiens GN=OTOF
-17,901998	STGEVVVTM	gi 34740331 ref NP_919224.1  otoferlin isoform a
-17,901998	STGEVVVTM	gi 35493853 ref NP_919303.1  otoferlin isoform c
-17,913793	AFGEVAVVK	Serine/threonine-protein kinase MRCK beta Homo sapiens
-17,913793	AFGEVAVVK	sp Q5VT25-4 MRCKA_HUMAN Isoform 4 of Serine/threonine-protein kinase MRCK alpha OS=Homo sapiens GN=CDC42BPB

-17,913793	AFGEVAVVK	sp Q5VT25 MRCKA_HUMAN Serine/threonine-protein kinase MRCK alpha OS=Homo sapiens GN=CDC42BPA PE=1 SV=1
-17,913793	AFGEVAVVK	CDC42BPB protein Homo sapiens
-17,913793	AFGEVAVVK	gi 30089962 ref NP_003598.2  serine/threonine-protein kinase MRCK alpha isoform B
-17,913793	AFGEVAVVK	gi 115527097 ref NP_006026.3  serine/threonine-protein kinase MRCK beta
-17,913793	AFGEVAVVK	gi 30089960 ref NP_055641.3  serine/threonine-protein kinase MRCK alpha isoform A
-17,913793	AFGEVAVVK	sp Q5VT25-6 MRCKA_HUMAN Isoform 6 of Serine/threonine-protein kinase MRCK alpha OS=Homo sapiens GN=CDC42BPA
-17,913793	AFGEVAVVK	sp Q5VT25-2 MRCKA_HUMAN Isoform 2 of Serine/threonine-protein kinase MRCK alpha OS=Homo sapiens GN=CDC42BPA
-17,935032	TVGEVFYTK	gi 295842556 ref NP_001171516.1  choline transporter-like protein 4 isoform 3
-17,935032	TVGEVFYTK	gi 148612887 ref NP_079533.2  choline transporter-like protein 4 isoform 1
-18,093028	ANGEVLCTV	gi 260654089 ref NP_940972.2  brorin precursor
-18,094741	YIGENILVL	gi 21536349 ref NP_001086.2  amiloride-sensitive cation channel 2, neuronal isoform b
-18,094741	YIGENILVL	gi 21536351 ref NP_064423.2  amiloride-sensitive cation channel 2, neuronal isoform a
-18,145863	SGGESLLVK	gi 89886477 ref NP_037535.2  striatin-4 isoform 1
-18,145863	SGGESLLVK	gi 89886480 ref NP_001034966.1  striatin-4 isoform 2
-18,15759	TFGEVLMVQ	gi 6678271 ref NP_031401.1  TAR DNA-binding protein 43
-18,15759	TFGEVLMVQ	sp Q13148-2 TADBP_HUMAN Isoform 2 of TAR DNA-binding protein 43 OS=Homo sapiens GN=TARDBP
-18,15759	TFGEVLMVQ	TAR DNA-binding protein-43 Homo sapiens
-18,167442	SVGEILDVI	gi 194272140 ref NP_055901.2  dendrin
-18,304123	TIGEIQVTL	gi 148596984 ref NP_004478.3  Golgin subfamily B member 1
-18,311744	DIGEVLVVG	gi 24234688 ref NP_004125.3  stress-70 protein, mitochondrial precursor
-18,318139	TLQEVLTV	Granzyme H Homo sapiens
-18,318139	TLQEVLTV	gi 15529990 ref NP_219491.1  granzyme H precursor
-18,325342	SKGEVLSVL	gi 13540565 ref NP_110415.1  transmembrane 7 superfamily member 4
-18,334446	SEEEVLVTV	gi 13787217 ref NP_001438.1  protocadherin Fat 2 precursor
-18,344272	SAGELLTL	gi 194595501 ref NP_689716.4  uncharacterized protein C20orf132 isoform 1
-18,344272	SAGELLTL	gi 47578111 ref NP_998796.1  uncharacterized protein C20orf132 isoform 2
-18,344272	SAGELLTL	gi 47578113 ref NP_998797.1  uncharacterized protein C20orf132 isoform 3
-18,344272	SAGELLTL	sp Q9H579 CT132_HUMAN Uncharacterized protein C20orf132 OS=Homo sapiens GN=C20orf132 PE=2 SV=2
-18,345617	QEGEVEIVV	sp Q8NDH2 CC168_HUMAN Coiled-coil domain-containing protein 168 OS=Homo sapiens GN=CCDC168 PE=2 SV=2
-18,345617	QEGEVEIVV	gi 226246554 ref NP_001139669.1  coiled-coil domain-containing protein 168
-18,356731	LGGFVLLVV	>gi 42822882 ref NP_981947.1  fat storage-inducing transmembrane protein 1
-18,361006	NMGEVLLVR	gi 31711992 ref NP_001922.2  dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex, mitochondrial precursor
-18,361006	NMGEVLLVR	Dihydrolipoyllysine-residue acetyltransferase Homo sapiens
-18,393409	FIGEVVSV	gi 51100974 ref NP_056009.1  myosin-Id
-18,400716	SCGEVIHVK	sp Q9H2U2-2 IPYR2_HUMAN Isoform 2 of Inorganic pyrophosphatase 2, mitochondrial OS=Homo sapiens GN=PPA2
-18,400716	SCGEVIHVK	gi 77812678 ref NP_008834.3  inorganic pyrophosphatase 2, mitochondrial isoform 2 precursor
-18,400716	SCGEVIHVK	gi 77812680 ref NP_789842.2  inorganic pyrophosphatase 2, mitochondrial isoform 3 precursor
-18,400716	SCGEVIHVK	gi 29171702 ref NP_789845.1  inorganic pyrophosphatase 2, mitochondrial isoform 1 precursor
-18,405009	TVGIVIVV	gi 7662320 ref NP_055628.1  leucine-rich repeats and immunoglobulin-like domains protein 2 precursor
-18,453565	SVGEVLQSV	gi 21493041 ref NP_006413.2  A-kinase anchor protein 3
-18,465921	SAGEVLMTI	gi 31317272 ref NP_055806.2  WD repeat and FYVE domain-containing protein 3
-18,465921	SAGEVLMTI	sp Q8IZQ1-2 WDFY3_HUMAN Isoform 2 of WD repeat and FYVE domain-containing protein 3 OS=Homo sapiens GN=WDFY3

-18,466015	SPGEVLRTL	gi 93102424 ref NP_055906.2  protein FAM179B
-18,466015	SPGEVLRTL	sp Q9Y4F4-3 F179B_HUMAN Isoform 3 of Protein FAM179B OS=Homo sapiens GN=FAM179B
-18,466015	SPGEVLRTL	sp Q9Y4F4-2 F179B_HUMAN Isoform 2 of Protein FAM179B OS=Homo sapiens GN=FAM179B
-18,470252	YIGQVLVTA	gi 34485720 ref NP_899243.1  echinoderm microtubule-associated protein-like 5
-18,470252	YIGQVLVTA	sp Q05BV3-4 EMAL5_HUMAN Isoform 4 of Echinoderm microtubule-associated protein-like 5 OS=Homo sapiens GN=EML5
-18,470252	YIGQVLVTA	sp Q05BV3-2 EMAL5_HUMAN Isoform 2 of Echinoderm microtubule-associated protein-like 5 OS=Homo sapiens GN=EML5
-18,470252	YIGQVLVTA	sp Q05BV3 EMAL5_HUMAN Echinoderm microtubule-associated protein-like 5 OS=Homo sapiens GN=EML5 PE=2 SV=3
-18,472182	AQGEVQLTV	gi 149363636 ref NP_036533.2  plexin-B2 precursor
-18,478842	ADGEVDVVV	Amiloride-sensitive amine oxidase Homo sapiens
-18,478842	ADGEVDVVV	Diamine oxidase Homo sapiens
-18,478842	ADGEVDVVV	sp P19801-2 ABP1_HUMAN Isoform 2 of Amiloride-sensitive amine oxidase [copper-containing] OS=Homo sapiens GN=ABP1
-18,478842	ADGEVDVVV	gi 73486661 ref NP_001082.2  amiloride-sensitive amine oxidase [copper-containing] precursor
-18,486044	NGGELFLTV	gi 4505351 ref NP_001534.1  bifunctional heparan sulfate N-deacetylase/N-sulfotransferase 1
-18,486044	NGGELFLTV	sp P52848-2 NDST1_HUMAN Isoform 2 of Bifunctional heparan sulfate N-deacetylase/N-sulfotransferase 1 OS=Homo sapiens GN=NDST1
-18,495633	TLGNVLVTV	gi 67944634 ref NP_001020095.1  exocyst complex component 1 isoform 1
-18,495633	TLGNVLVTV	gi 30410716 ref NP_839955.1  exocyst complex component 1 isoform 2
-18,503243	FVGFVIVTF	sp Q13936-34 CAC1C_HUMAN Isoform 34 of Voltage-dependent L-type calcium channel subunit alpha-1C OS=Homo sapiens GN=CACNA1C
-18,503243	FVGFVIVTF	sp Q13936-18 CAC1C_HUMAN Isoform 18 of Voltage-dependent L-type calcium channel subunit alpha-1C OS=Homo sapiens GN=CACNA1C
-18,503243	FVGFVIVTF	sp Q13936-28 CAC1C_HUMAN Isoform 28 of Voltage-dependent L-type calcium channel subunit alpha-1C OS=Homo sapiens GN=CACNA1C
-18,503243	FVGFVIVTF	gi 192807298 ref NP_001122311.1  voltage-dependent L-type calcium channel subunit alpha-1D isoform c
-18,503243	FVGFVIVTF	sp Q13936-17 CAC1C_HUMAN Isoform 17 of Voltage-dependent L-type calcium channel subunit alpha-1C OS=Homo sapiens GN=CACNA1C

**Supplementary Figure 2: Gene expression profile for *CDH13*.** Probe fluorescence intensity is shown on the x-axis in logarithmic scale. On the y-axis malignant and healthy (non-) hematopoietic cell types are shown. Each dot represents a different sample and the mean and standard deviation of gene expression is shown for each cell type.

