

Table 2S. Final collection of 131 unique IGH multiple myeloma sequences (Institutional Series)

Sequence code	IGHV gene	IGHD gene	IGHD reading frame	IGHJ gene	Identity to germline	HCDR3 AA sequence (IMGT)	HCDR3 length (AA)
BO65ER	IGHV1-18*01	IGHD3-9*01	1	IGHJ4*02	86,6%	CARSQRAFDGVDYW	12
TO01CS	IGHV1-2*02	IGHD3-10*01	3	IGHJ6*02	90,9%	CAKSGEASFTLARGMILTNIYYRMDVW	27
TO02DA	IGHV1-24*01	IGHD3-10*01	2	IGHJ3*02	83,0%	CATVDSSESGHYALEAFDIW	17
TO04T	IGHV1-46*01	IGHD3-10*01	2	IGHJ4*02	93,8%	CARVKGMDYYGSGSFYNFDYW	19
BO08LP	IGHV1-69*06	IGHD3-10*01	3	IGHJ6*02	92,2%	CASNRRGFIDTPAAYYYHGMDVW	21
TO05D	IGHV1-69*01	IGHD2-21*02	3	IGHJ5*01	84,9%	CVSDRYVSATAARWFDSW	16
TO05FG	IGHV1-69*01	IGHD4-17*01	3	IGHJ4*02	94,9%	CARGSSEHMTMVTFFDYW	16
TO06ZL	IGHV1-69*01	IGHD3-16*02	2	IGHJ6*02	88,7%	CARDRPNDVFVRGNYRHGVAWPYGMDVW	25
TO08CE	IGHV1-69*01	IGHD3-22*01	2	IGHJ4*02	90,4%	CARGPDSNSFYFYW	13
TO09P	IGHV1-69*01	IGHD3-3*01	2	IGHJ6*02	92,4%	CARGGEFVWNGDRFFYYALDVW	19
TO11B	IGHV1-69*04	IGHD5-24*01	3	IGHJ4*02	92,4%	CASWQAQDGYNYFDYW	15
BO75NV	IGHV2-26*01	IGHD3-10*01	1	IGHJ5*02	97,0%	CARIEKRFEGELSTSQRFDPW	18
TO12D	IGHV2-5*04	IGHD1-26*01	1	IGHJ4*02	89,7%	CVHRVAATDIFDFW	12
BO19FP	IGHV2-5*04	IGHD3-10*01	2	IGHJ4*03	90,6%	CVHTTTNYHSHSGSYFSYW	17
BO31MS	IGHV2-5*10	IGHD5-12*01	1	IGHJ4*02	87,6%	CARMGNADFEYW	10
TO13DG	IGHV2-5*10	IGHD3-16*01	2	IGHJ4*02	79,7%	YGSWNYDPFDYW	10
TO15C	IGHV2-70*12	IGHD3-10*01	3	IGHJ4*02	92,8%	CARAPMIGGVTHCDYYW	15
TO16MS	IGHV2-70*10	IGHD5-24*01	3	IGHJ4*02	93,2%	CARSGYYFEGNTYHYGNYFDYW	20
TO17SG	IGHV2-70*01	IGHD3-16*01	2	IGHJ4*02	94,7%	CARISRAYYFDYW	11
TO19MB	IGHV3-11*01	IGHD3-16*02	2	IGHJ1*01	90,6%	CAKDGQYDYDRGTYRDSRW	18
TO20TF	IGHV3-11*01	IGHD6-13*01	1	IGHJ5*02	93,5%	CARESTSWSRGYDPW	13
TO22TF	IGHV3-15*01	IGHD3-3*01	3	IGHJ4*02	96,1%	CTTDWPLTVFPFGNYW	14
TO23FC	IGHV3-15*01	IGHD3-10*01	2	IGHJ4*02	90,8%	CTTSANYYGWGTLPFDW	17
TO24LB	IGHV3-15*01	IGHD3-22*01	2	IGHJ4*02	92,7%	CSINYVVRSYGASPRIFDYW	19
TO25CN	IGHV3-15*01	IGHD3-10*02	1	IGHJ4*03	97,6%	CRTDKLRFLLMDVW	12
TO27VG	IGHV3-15*07	IGHD4-23*01	2	IGHJ4*02	90,3%	CTTDPEFYDSVGYRYSYW	16
BO05CD	IGHV3-15*07	IGHD3-22*01	2	IGHJ4*02	93,9%	CPTDLYDITYGRALDYW	14
TO29CA	IGHV3-20*01	IGHD6-25*01	3	IGHJ2*01	77,5%	CPRPITLLHRGRGYFDLW	17

TO30CG	IGHV3-20*01	IGHD6-19*01	2	IGHJ4*02	95,1%	CARIRVAGKPKQYYFDWW	15
TO31BN	IGHV3-21*01	IGHD3-10*01	2	IGHJ2*01	89,4%	CASALNYGSGNKYYWYFDIW	18
TO32EG	IGHV3-21*01	IGHD3-22*01	2	IGHJ6*02	96,3%	CAREWSVSGYYMGAMDVW	16
TO35DP	IGHV3-21*01	IGHD6-19*01	3	IGHJ5*02	98,9%	CARENKHEWLVLNYNWFDPW	18
BO49MF	IGHV3-21*01	IGHD3-16*02	2	IGHJ5*01	92,7%	CAKDVEFLPWTGLDSW	14
BO47PS	IGHV3-21*01	IGHD1-26*01	3	IGHJ4*02	89,5%	CARGGGSFNLW	9
BO07EB	IGHV3-21*01	IGHD3-9*01	1	IGHJ4*02	91,8%	CATRYLKNRDDYW	11
TO37BA	IGHV3-23*01	IGHD6-19*01	1	IGHJ5*02	90,2%	CAKEPLKYSNELLRPNNPL	17
TO39TC	IGHV3-23*01	IGHD2-2*01	3	IGHJ4*02	88,8%	CAKPHPKRDTVVI PAALGYW	18
TO43MK	IGHV3-23*01	IGHD3-10*01	2	IGHJ4*02	92,7%	CAKANTFY YGLASYCHFEYW	18
TO44P	IGHV3-23*01	IGHD1-1*01	3	IGHJ5*01	93,0%	CARDTNTLNTWFDFW	13
TO45RG	IGHV3-23*01	IGHD3-3*01	2	IGHJ4*02	89,6%	CAKVSSFDFWSGYPCFDFW	17
TO46IP	IGHV3-23*01	IGHD3-9*01	2	IGHJ4*02	94,7%	CAKQANDMLTGYYPFDFW	16
TO48BG	IGHV3-23*01	IGHD5-5*01	3	IGHJ4*02	90,8%	CAKDRRGYSYGFLDIW	14
TO49MR	IGHV3-23*01	IGHD6-19*01	1	IGHJ5*02	92,2%	CAKDPHSSAWNFAWFDPW	16
TO51OF	IGHV3-30*03	IGHD3-10*01	1	IGHJ4*02	84,0%	YTKDRRFRDPSRFYFNW	16
TO52ZG	IGHV3-30*01	IGHD1-26*01	3	IGHJ5*02	93,7%	CARPNSGSLHW	9
TO55PB	IGHV3-30*03	IGHD3-22*01	3	IGHJ5*02	87,4%	CARGNTVIGGVEVLEHEXNWFDPW	22
TO56CL	IGHV3-30*03	IGHD3-10*01	1	IGHJ4*02	82,9%	TAKDRRFREVSRYFDYW	16
TO57LN	IGHV3-30*03	IGHD3-3*01	2	IGHJ4*02	92,4%	CAKDPGDDFWRGYPDYW	15
TO58D	IGHV3-30*03	IGHD3-3*01	2	IGHJ4*02	94,0%	CAKVLGDFWSGYFEHFFDNW	18
TO59GE	IGHV3-30*14	IGHD6-19*01	1	IGHJ4*02	91,3%	CARSPPGWLYYFDYW	13
TO62IV	IGHV3-30*03	IGHD2-2*01	3	IGHJ4*01	92,0%	CAKDDGPEDMGLFDYW	14
TO63TM	IGHV3-30*03	IGHD4-4*01	1	IGHJ4*02	93,8%	CVKVGAPAGQGLQDYW	14
TO64TS	IGHV3-30*03	IGHD2-21*01	2	IGHJ4*02	95,4%	CARDGADGYNLDYW	12
TO65BG	IGHV3-30*03	IGHD6-13*01	3	IGHJ4*02	87,8%	CAGLQQLVSHSDYW	12
TO66GI	IGHV3-30*03	IGHD3-9*01	2	IGHJ4*02	92,2%	CARDRPYDDILTGYFDFW	16
BO53EG	IGHV3-30*09	IGHD1-1*01	1	IGHJ5*02	89,0%	CTRDDVTGTTGFDPW	13
BO15MD	IGHV3-30*03	IGHD3-10*01	2	IGHJ4*02	84,6%	CAKGASGLL TEW	10
TO68EI	IGHV3-30-3*01	IGHD3-16*01	1	IGHJ4*02	91,3%	CVRVGGSDLSSLI FDYW	15
TO69A	IGHV3-30-3*01	IGHD3-10*01	2	IGHJ4*02	90,5%	CGRDRFYYS SGRGGFVDFW	17
TO70D	IGHV3-30-3*01	IGHD4-4*01	2	IGHJ4*02	95,9%	CARDKEAYS NYRMCFDQW	16
TO72AB	IGHV3-33*01	IGHD1-26*01	1	IGHJ6*02	94,0%	CARDSTRGGQVGGIQFY YGMDVW	22
TO75L	IGHV3-33*03	IGHD3-10*01	3	IGHJ4*02	90,2%	CARDMGGLRGVTNYFDSW	16

TO76BC	IGHV3-33*01	IGHD2-2*01	2	IGHJ4*02	90,0%	CARGHSTSHYYFDAW	13
TO82BA	IGHV3-33*01	IGHD1-14*01	1	IGHJ4*02	93,3%	CAREHGMAVDYW	10
BO36MU	IGHV3-30*02	IGHD3-3*01	1	IGHJ4*02	94,5%	CVSPILEIVSHFW	11
TO86CF	IGHV3-43*01	IGHD2-15*01	2	IGHJ6*02	92,8%	CVRDSCSGGSCYSGGSYYYRGMDVW	23
BO48NS	IGHV3-43*01	IGHD6-19*01	2	IGHJ4*02	94,4%	CARGGEPGAGTLLFAHW	15
BO01GD	IGHV3-43*01	IGHD1-26*01	2	IGHJ4*02	95,5%	CAGGEALHYW	8
TO89MP	IGHV3-48*01	IGHD2-15*01	3	IGHJ5*02	90,4%	CVRAGTPGLDNWFDPW	14
TO90LD	IGHV3-48*03	IGHD5-5*01	3	IGHJ6*02	93,9%	CARGACSVGHYYGMDVW	15
TO87GR	IGHV3-48*03	IGHD2-21*01	3	IGHJ4*02	100,0%	CARGPPHRSRTHIVVVIAMRFDYW	22
TO91P	IGHV3-48*02	IGHD5-12*01	3	IGHJ5*01	90,2%	CASGSYGGYLGLDFW	13
TO92SA	IGHV3-64*05	IGHD6-6*01	1	IGHJ4*02	91,4%	CVKGTSSSSEPFDYW	13
TO93AR	IGHV3-64*02	IGHD5-24*01	2	IGHJ6*02	98,6%	CARFYYYYGMDVW	11
TO95TF	IGHV3-7*01	IGHD5-12*01	1	IGHJ4*02	94,8%	CARESTRFDDW	9
TO96CP	IGHV3-7*01	IGHD5-12*01	1	IGHJ5*01	92,5%	CAREFAYIVSTNRTGSTW	16
TO97S	IGHV3-7*01	IGHD5-5*01	3	IGHJ3*01	92,4%	CARRGAYNYGSRWIHYDSFDFW	20
TO98BT	IGHV3-74*01	IGHD2-21*01	3	IGHJ5*02	91,5%	CXRHNMLERTEGPGNL	15
TO99D	IGHV3-74*01	IGHD3-22*01	2	IGHJ5*02	90,0%	CARGPAVYYDTRVVSPLPLTPG	19
TO100UV	IGHV3-74*01	IGHD2-8*02	3	IGHJ4*02	93,3%	CAXEAVGYGARFDNW	13
TO101JE	IGHV3-9*01	IGHD2-15*01	3	IGHJ5*02	90,3%	CAKDIGSGLVVVVAAPRTPTTGLDVW	24
TO102DI	IGHV3-9*01	IGHD2-2*01	2	IGHJ4*02	95,7%	CGKDIRGGPNGGPFTSCVIDSW	20
TO105PR	IGHV3-9*01	IGHD6-6*01	3	IGHJ4*02	93,1%	CVTGNNQQPVLAAEVFDYW	18
TO106PG	IGHV3-9*01	IGHD6-6*01	2	IGHJ4*02	96,1%	CATSKGAI AARRDGDGYFDYW	19
BO59MC	IGHV3-9*01	IGHD5-12*01	1	IGHJ4*02	91,8%	CAKLDGPFVAAESHSEYW	16
TO107C	IGHV4-30-2*05	IGHD3-3*01	1	IGHJ4*02	79,8%	CATPGVLRFLGLLVSNLGLFDYW	21
TO108G	IGHV4-30-4*01	IGHD5-5*01	3	IGHJ5*02	90,1%	CARATYIYGYHLFDTW	14
BO16RM	IGHV4-31*03	IGHD1-7*01	2	IGHJ4*02	91,4%	CARRGKPPHGLELRLDYFDLW	19
TO109H	IGHV4-34*01	IGHD2-2*01	2	IGHJ4*02	90,7%	CARPHYCSATTCTGPMHYW	17
TO110CE	IGHV4-34*01	IGHD3-16*02	2	IGHJ4*02	94,1%	CARGRFYDYVWGSYRYSVDFW	22
BO23BD	IGHV4-39*01	IGHD3-22*01	3	IGHJ3*02	93,8%	CARRSRITVIPGTFDMW	15
BO35PK	IGHV4-39*07	IGHD6-19*01	1	IGHJ5*02	90,6%	CARESDGYTNGWFVDPW	17
TO112BL	IGHV4-39*01	IGHD2-21*02	2	IGHJ4*02	91,9%	CVRPSICGGDCYSISAFDYW	18
TO113K	IGHV4-4*02	IGHD3-10*01	2	IGHJ4*02	92,3%	CARDPPSHTYYGSGLLDFW	18
TO114MA	IGHV4-59*10	IGHD5-24*01	3	IGHJ4*01	87,4%	CARDPLRRDGYNYAFDHW	16
TO111RU	IGHV4-4*07	IGHD6-6*01	1	IGHJ4*01	94,6%	CVRDIGGSSSSFFDYW	14

TO115AC	IGHV4-59*01	IGHD2-21*02	3	IGHJ3*01	85,6%	CARSDYEVPIXHG	11
TO116C	IGHV4-59*03	IGHD4-17*01	2	IGHJ4*02	89,0%	CARGPRGFYDYGDYGEPPWEGQFDFW	25
BO44FS	IGHV4-59*02	IGHD6-19*01	1	IGHJ3*02	85,6%	CARDSDSSGSDAFDIW	14
TO117B	IGHV4-61*02	IGHD3-3*02	2	IGHJ4*02	93,1%	CARLSDKNYYYSFDYW	14
TO118BA	IGHV4-59*08	IGHD3-16*01	1	IGHJ4*02	90,3%	CASRELLLHFDNW	11
BO62AL	IGHV4-61*02	IGHD3-16*01	3	IGHJ4*02	90,6%	CAREDAASGGVFDYW	13
BO50FM	IGHV4-61*01	IGHD5-5*01	3	IGHJ5*02	90,0%	CARVTSSGYVGNWFDPW	15
TO119H	IGHV4-b*01	IGHD3-10*01	1	IGHJ4*02	94,8%	CARDLRVDGELLYRAYYFDYW	19
TO120GG	IGHV5-51*01	IGHD1-1*01	1	IGHJ4*02	95,9%	CARRTTGTGYGGLDLW	13
TO121RM	IGHV5-51*01	IGHD1-7*01	1	IGHJ3*02	88,3%	CARAGFITATRRRGVGFADIW	18
TO123FR	IGHV5-51*01	IGHD2-2*02	3	IGHJ3*01	95,4%	CARRFLHVAVVIHDAFDVW	17
TO124BA	IGHV5-51*05	IGHD4-23*01	2	IGHJ5*02	84,7%	CARRREDYGGPREYYDPW	16
TO125A	IGHV5-51*01	IGHD4-17*01	2	IGHJ4*02	93,6%	CATASDYGLGDYCDFW	14
TO126CG	IGHV6-1*01	IGHD6-13*01	3	IGHJ4*02	89,9%	CARCTLWQQLDLDFDFW	13
TO128AF	IGHV6-1*01	IGHD2-2*01	3	IGHJ4*02	97,2%	CARAHREVGAFGFDYW	14
BO46DD	IGHV6-1*02	IGHD1-7*01	3	IGHJ5*02	90,6%	CARDGPAHNWNNGEAPRWFPDPW	21
BO04FB	IGHV6-1*01	IGHD1-26*01	2	IGHJ4*01	94,6%	CVREAEWELLLFSLDYW	15
TO41FG	IGHV3-23*01	IGHD2-15*01	2	IGHJ6*02	93,9%	CGKDGycGGDNCYSVPAYGMDVW	21
TO8OMG	IGHV3-33*03	IGHD5-12*01	3	IGHJ2*01	91,2%	CARDKPPGYWGHDLYWHFDLW	19
TO104BA	IGHV3-9*01	IGHD5-12*01	2	IGHJ2*01	89,7%	CARSVGHGDTGRAPLGKKYWPFDVW	23
TO03SF	IGHV1-3*01	IGHD2-8*02	1	IGHJ4*02	94,9%	CARWSSAEKETTLNIVLMVYDHW	21
TO14MF	IGHV2-70*01	IGHD3-16*01	2	IGHJ6*01	93,0%	CARILGGVW	7
TO21ZS	IGHV3-11*03	IGHD3-22*01	2	IGHJ4*02	87,4%	CARDRDYDSVCTSATSQYW	16
TO33CM	IGHV3-21*01	IGHD3-3*01	1	IGHJ6*01	93,9%	CARDCSGDFCDYYCYG	14
TO36P	IGHV3-21*01	IGHD1-1*01	1	IGHJ4*02	86,8%	CAREGTTRRRGFFDHW	14
BO14CP	IGHV3-21*01	IGHD4-24*01	2	IGHJ4*02	93,2%	LCERWQIGCRDYW	11
TO40VG	IGHV3-23*01	IGHD2-2*01	3	IGHJ4*02	90,6%	CATTHGPLFVMLPTTIPSGPDYW	21
TO53GG	IGHV3-30*03	IGHD2-2*02	3	IGHJ4*03	83,1%	CARDFFCVIVVPAAIMSTTTNMDVW	24
TO54GG	IGHV3-30*04	IGHD4-17*01	2	IGHJ4*02	87,9%	CARYDGDHVRQFNcw	14
TO60CR	IGHV3-30*04	IGHD4-17*01	3	IGHJ4*02	81,6%	CARVLTVTRKRQFNcw	14
TO61TR	IGHV3-30*04	IGHD4-17*01	2	IGHJ4*02	86,7%	CARVDGDHVNVLIVG	14
TO66CS	IGHV3-30*03	IGHD7-27*01	3	IGHJ4*02	94,4%	CALSANWDPW	8
TO84CB	IGHV3-33*01	IGHD4-17*01	3	IGHJ4*02	85,4%		16
TO94WH	IGHV3-64*05	IGHD2-8*02	1	IGHJ4*02	94,9%	CAKYWGWWRYYFDYW	13
TO112S	IGHV4-39*01	IGHD2-2*01	2	IGHJ1*01	85,3%	CARXVARRAGQNSPSLMNW	17

Abbreviations

IGH, immunoglobulin heavy chain gene

MM, multiple myeloma

HCDR3, complementarity determining region 3 on heavy chain gene

AA, aminoacid

IMGT, identified by ImMunoGeneTics V-QUEST tools (<http://imgt.cines.fr/>), see in text reference 20

i)

