Supplemental Table 1

Patient #	IPSS Cytogenetic Risk Group Pre-Treatment	Best Response	Karyotype Post-Treatment	SNP-A Defects	Type Of SNP-A Defect	TET2	DNMT3A	IDH1/2	CBL	JAK2	SF3B1	U2AF1	SRSF2	NRAS	KRAS	EZH2	P53
1	Intermediate	CR	Abnormal	Y	Gain	c.4249,G>T p.Val1417Phe	WT	c.419G>A p.R140G	WT	WT	WT	WT	c.284 C>G P95R	WT	WT	WT	WT
2	Intermediate	CR	Abnormal	Y	Gain	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
3	Good	HI-n	Normal	N	None	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
4	Poor	No response	NA	N	None	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	c.711, G>A p.M237 I
5	No growth	CR	No growth	Y	Loss	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
6	Intermediate	CR	Normal	Y	Gain	WT	c.2645 G>A p.R882H	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
7	Intermediate	CR	Abnormal	Y	Loss	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
8	Good	CR	Normal	Y	Gain	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
9	Intermediate	CR	Abnormal	Y	Gain/ Loss/ UPD	WT	c.2644 C>T p.882C	c.394C>T p.R132C	WT	WT	WT	WT	WT	WT	c.35 G>A p.G12A	WT	WT
10	Good	CR	Normal	N	None	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
11	Good	CR	Normal	N	None	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
12	Poor	NR	Abnormal	Y	Gain/ loss	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
13	Good	NR	Normal	Y	loss	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
14	Intermediate	HI-n; HI-e	Normal	Y	loss	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
15	Good	NR	Normal	NA	NA	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
16	Poor	CR	Abnormal	NA	NA	c.4513 G>A* p.A1505 T	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
17	Good	CR	Normal	NA	NA	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	c.713 G>A C238Y
18	Poor	NR	Abnormal	NA	NA	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
19	Good	CR	Normal	NA	NA	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT

NA, Not Available; CR, Complete Response; NR, Not Response; H.I. Hematological Improvement; WT, Wild Type; SNP-A Defect, Y=YES, N=NO, UPD, Uniparental Disomy, NA, Not available

*This Mutation has not been reported. It has not been confirmed based on no availability of cells.

Supplemental Table 2

Patient	Karyotype by MC Pre-Treatment	Best Response	Karyotype by MC Post-Treatment	SNP-A Defects
1	46,X,i(X)(p10)[2]/46,XX[cp18].	**CR**	46,XX[cp20]	1p36.13p36.13, 3p21.31p21.31, 3q21.3q21.3, 4p16.1p16.1, 7p22.2p22.2, 7p15.1p15.1, 8q24.3q24.3, 9q33.2q33.2, 9q34.11q34.11, 9q34.2q34.2, 10q22.3q22.3, 10q24.33q24.33, 11p15.5p15.4 , 12q24.11q24.11, 12q24.31q24.31, 14q32.12q32.12, 14q32.33q32.33, 16p13.3p13.3, 16q22.1q22.1, 17p13.1p13.1, 17q21.33q21.33, 17q23.2q23.2, 17q25.2q25.3, 19p13.3q13.33, 22q11.22q13.31
2	47,XX,+8[20]	**CR**	47,XX,+8[20]	8p23.1-q24.3, 19p12-12
3	46,XY[20]	**HI-n**	46,XY[20]	-

4	88-89<4n>,XXXX,ins(4:?)(q12;?)x2,-5,-5,-7, -7,der(8)t(7;8)(q11.2;q24)x2,-13,-13,-19,-19,+3-5mar[cp5]/46,XX[17].	**NR**	NA	-
5	No growth	**CR**	No growth	3q13.31-q13.31
6	47,XY,+8[18]/46,XY[2]	**CR**	46,XY[16]	8p23.3-q24.3, 9p13.1-q12
7	46,XY,del(3)(q13.1q24)[cp11]/46,XY[1].	**CR**	46,XY,del(3)(q13.1q24)[3]/45,sl,-20(5)/46,sl,der(7)t(1;7)(q21;p13)[cp4]/46,sl,add(17)(p11.2)[cp7]/46,XY[1]	1p36.11p36.11, 17q23.2q23.2
8	46,XY[20]	**CR**	46,XY[6].	4q13.2
9	46,XY,del(5)(q3?1q3?5)[2]/46,XY[cp18]; FISH studies showed Trisomy 8	**CR**	47,XY,+8[9]	4p13-p12, 4p12-p12 (Gain); 4q25-q25, 5q31.2-q31.2, 13q14.3-q14.3, 13q21.33-q21.33 (Loss); 6p25.3-p22.1, 8q24.3-q24.3 (UPD)
10	46,XY[20]	**CR**	46,XY[20]	-
11	46,XY[20]	**CR**	46,XY[20]	-

12	44,X,-Y,del(5)(q22q35),-7,add(10)(q26),-16,-20,+mar1,+r[10]/45,sl,+ace[5]/44,sdl1,-18[5].	**NR**	44,X,-Y,del(5)(q22q35),-7,add(10)(q26),i(11)(q10),-16,-18,-20,+r,+mar1,+ace[cp16]/44,X,-Y,dup(5)(q13q35), del(8)(p23),-15,-20,+r,+ace[cp3]/46,XY[1]	13q31.1-q31.1, 20p12.3-p11.21 (Gain); 5p15q33.3 (small), 7p22.3q36.3, 16p13.3q24.3, 20q11.23q13.33 (loss)
13	46,XY[20]	**NR**	46,XY[20]	20p12.1, 6p12.3
14	45, -17 [4]/ 46, XX[16]	**HI-n; HI-e**	46,XX[20]	1p32.3-1p32.3, 1q32.1-q32.1, 3p21.31-p21.31, 3q13.33-q13.33, 4p16.3-p16.3, 4p12-p12, 4q13.3-q13.3, 4q24-q24, 4q31.3-q31.3, 5q12.1-q12.1, 5q23.3q23.3, 6q22.32-q22.32, 6q25.1q25.1, 9q33.3-q33.3, 12q24.11-q24.11, 13q14.3-q14.3, 13q22.3-q22.3, 14q22.1-q22.1, 15q25.2-q25.2, 17q23.2-q23.2, 19p13.13p13.13, 22q13.31-q13.31, 22q13.33-q13.33
15	46,XY[20]	**NR**	46,XY[20]	NA
16	45,XX,-7[7]/46,XX[13]	**CR**	45,XX,-7[7]//46,XY[4]	NA
17	46,XY[20]	**CR**	46,XY[20]	NA

18	45-46,XX,add(4)(q21),psu dic(5;?)(q11.1;?),add(8)(p23),-13,-16,add(17)(p11.2),-18,+r,+mar1,+mar2[cp18]/46,XX[2].	**NR**	45-46,XX,add(4)(q21),-5[3],psu dic(5;?)(q11.1;?)[16],add(8)(p23),-13[17], -16,add(17)(p11.2),-18,+r[5],+mar1,+mar2[cp20]	NA
19	46,XY[20]	**CR**	46,XY[20]	NA

CR; Complete Response, NR; No Response. HI; Hematological Improvement,