

Table S1. Clinical information of ten AML patients investigated in this study

	PT ID	SEX	AGE	DX	FAB	CYTOGENETICS	MOLECULAR MUTATION
non-CR	PT326	F	59	AML	M1	47,XX,+13[1] / 46,XX[19]	C-KIT(-);RAS(-);FLT-3(-);NPM1(-)
	PT103	F	45	AML	M0	46,XX,del(7)(q22q34)[3] / 46,XX[6]	JAK-2(-);NPM1(-);C-KIT(-);FLT-3(-);K-RAS(+)
	PT442	M	42	AML	M6	47,XY,+8[2] / 46,XY[18]	RAS(-); C-KIT(-);FLT-3(-)
	PT585	M	32	AML	M2	46,XY[20]	FLT3 (+), RAS(-)
	PT298	F	52	AML	M4	46,XX,del(5)(q13q33)[2]/46,XX[18]	FLT-3(-)
CR	PT604	M	57	AML	M4	46,XY[20]	RAS(-);C-KIT(-);NPM1(+);FLT-3(+)
	PT558	F	63	AML	Unclassified	47,XX,+8[20]	FLT-3(-);RAS(+);C-KIT(-)
	PT721	F	62	AML	M5	Trisomy 8	FLT-3(-);RAS(-)
	PT530	F	52	AML	Unclassified	46,XX,t(6;9)(p23;q34)[20].	NPM-1(-);C-KIT(-);RAS(-);FLT-3(+)
	PT487	F	45	AML	M5	46,XX,t(11;11)(p15;q23)[15]/46,XX[5]	NPM-1(-);C-KIT(-);RAS(-);FLT-3(-)

CR: patient was in complete remission; non-CR: patient was not in complete remission at baseline
PT: patient; DX: diagnosis; FAB: French-American-British classification; del: deletion; t: translocation

Table S2. Antibodies used in RPPA, grouped by pathway or functional group

Pathway and functional group		Name	Vendor	Catalog #
AKT/mTOR upstream signaling	1	INPP4B	Santa Cruz	SC-12318
		p-PDK1 S241	CST	3061
		PI3Kp110A	CST	4255
		PI3Kp85	Upstate (Millipore)	06-195
		PKCA	Upstate (Millipore)	05-154
AKT/mTOR signaling	2	p-PKCA S657	Upstate (Millipore)	06-822
		PTEN	CST	9552
		4EBP1	CST	9452
		p-4EBP1 S65	CST	9456
		p-4EBP1 T70	CST	9455
		p-4EBP1 T37/46	CST	7547
		AKT	CST	9272
		p-AKT S473	CST	9271
		p-AKT T308	CST	9275
		EEF2	CST	2332
		EEF2K	CST	3692
		EIF4E	CST	9742
		MTOR	CST	2983
		p-MTOR S2448	CST	2971
		P70S6K	Epitomics	1494-1
		p-P70S6K T389	CST	9205
		PAXILLIN	Epitomics	1500-1
		p-PRAS40 T246	Biosource	441100G
AKT/mTOR downstream signaling	3	p-S6 S235/236	CST	2211
		p-S6 S240/244	CST	5364
		TUBERIN	Epitomics	1613-1
		FOXO3A	CST	9467
		p-FOXO3A S318/321	CST	9465
RAF/RAS/ERK upstream signaling	4	GSK3AB	Santa Cruz	SC-7291
		p-GSKAB S21/9	CST	9331
		p-GSK3 S9	CST	9336
		CAVEOLIN1	CST	3238
RAF/RAS/ERK signaling	5	C RAF	Millipore	05-739
		p-C RAF S338	CST	9427
		KRAS	Santa Cruz	sc-30 (F234)
		p-MAPK T202/Y204	CST	4377
		MEK1	Epitomics	1235-1
		p-MEK1 S217/221	CST	9154
		P38MAPK	CST	9212
SRC signaling	6	p-P38 T180/Y182	CST	9211
		SRC	Upstate (Millipore)	05-184
STAT signaling	7	p-SRC Y416	CST	2101
		p-STAT3 Y705	CST	9131
NOTCH signaling	8	STAT5A	Epitomics	1289-1
		NOTCH1	CST	3268
MET signaling	9	NOTCH3	Santa Cruz	sc-5593
		C MET	CST	3127
MYC signaling	10	p-C MET Y1235	CST	3129
		C MYC	CST	9402
C-JUN/JNK signaling	11	p-C JUN S73	CST	9164
		p-JNK T183/185	CST	4668
		JNK2	CST	4672
RSK family signaling	12	p-P90RSK T359/S363	CST	9344
Heat shock protein family	13	HSP70	CST	4873
Hedgehog signalling	14	PTCH	SDI	2113.00.02
SMAD signaling	15	SMAD1	Epitomics	1649-1
		SMAD3	Epitomics	1735-1
SMAC and IAP signaling	16	CIAP	Millipore	07-759
		SMAC	CST	2954
		SURVIVIN	CST	2802
		XIAP	CST	2045
YAP and TAZ signaling	17	p-TAZ S89	Santa Cruz	sc-17610
		YAP	Santa Cruz	sc-271134
		p-YAP S127	CST	13008
AMPK signaling	18	AMPKA	CST	2532
		p-AMPK T172	CST	2535
Metabolism and regulation	19	p-ACC S79	CST	3661
		ACC1	Epitomics	1768-1
		TIGAR	Epitomics	S1711
Autophagy	20	BECLIN	Santa Cruz	sc-10086

BCL-2 protein family	21	BAK BAX BCL2 BCLX BCLXL BID BIM MCL1	Epitomics CST Dako Epitomics CST Epitomics Epitomics CST	1542-1 2772 M0887 1018-1 2762 1008-1 1036-1 94296
Cell cycle and regulation	22	14-3-3 E CDK1 CDK4 CHK1 p-CHK1 S345 CHK2 p-CHK2 T68 CYCLINB1 CYCLIND1 CYCLINE1 P21 P27 p-P27 T157 p-P27 T198 RB p-RB S807/811	Santa Cruz CST CST CST CST CST CST Epitomics Santa Cruz Santa Cruz Santa Cruz Epitomics R&D Abcam CST CST	sc-2395 9112 2345 2360 2348 3440 2197 1495-1 SC-718 SC-247 SC-397 1591-1 AF1555 ab64949 9309 9308
DNA replication and repair	23	53BP1 ERCC1 MRE11 MSH2 MSH6 P53 PCNA RAD50 RAD51 XRCC1	CST Lab Vision CST CST SDI CST Abcam Millipore Chem Biotech CST	4937 MS-671-PO 4847 2850 2203.00.02 9282 ab29 05-525 na 71 2735
Protein repair and T cell	24	DJ1	Abcam	ab76008
Cell death and apoptosis	25	ANNEXINI CASPASE-3 active CASPASE7 cleaved CASPASE-9_cleaved PARP_cleaved	Invitrogen Epitomics CST CST CST	71-3400 1476-1 9491 9501 9546
RTK signaling and regulation	26	EGFR p-EGFR Y1068 p-EGFR Y1173 p-EGFR Y992 GAB2 GATA3 MIG6 VEGFR2	Santa Cruz CST Epitomics CST CST BD Biosciences Sigma CST	SC-03 2234 1124 2235 3239 558686 WH0054206M1 9698
Insulin regulation protein family	27	IGF1RB IGFBP2 IRS1	CST CST Upstate (Millipore)	3027 3922 06-248
Hormone receptor and regulator	28	AIB1 AR ERA p-ERA S118 PR	BD Biosciences Epitomics Lab Vision Epitomics Epitomics	611105 1852-1 RM-9101-S 1091-1 1483-1
HER protein family	29	HER2 p-HER2 Y1248 HER3 p-HER3 Y1298	Lab Vision Upstate (Millipore) Santa Cruz CST	MS-325-P1 06-229 sc-285 4791
Adhesion and regulation	30	CATENINA CATENINB CD31 DVL3 E CADHERIN FAK N CADHERIN P CADHERIN SNAIL TAU	Calbiochem CST Dako CST CST Epitomics CST CST CST Upstate (Millipore)	CA1030 9562 M0823 3218 4065 1700-1 4061 2130 3895 05-804
Cellular membrane and structure protein family	31	CLAUDIN7 COLLAGENVI FIBRONECTIN NF2 RAB11 STATMIN VASP	Novus Santa Cruz Epitomics SDI CST Epitomics CST	NB100-91714 SC-20649 1574-1 2271.00.02 3539 1972-1 3132
Stem cell regulation	32	C KIT SYK	Epitomics Santa Cruz	1522 sc-1240
Inflammation and regulation	33	COX2 p-NFkBp65 S536 YB-1 p-YB-1 S102	Epitomics CST SDI CST	2169-1 3033 1725.00.0 2900

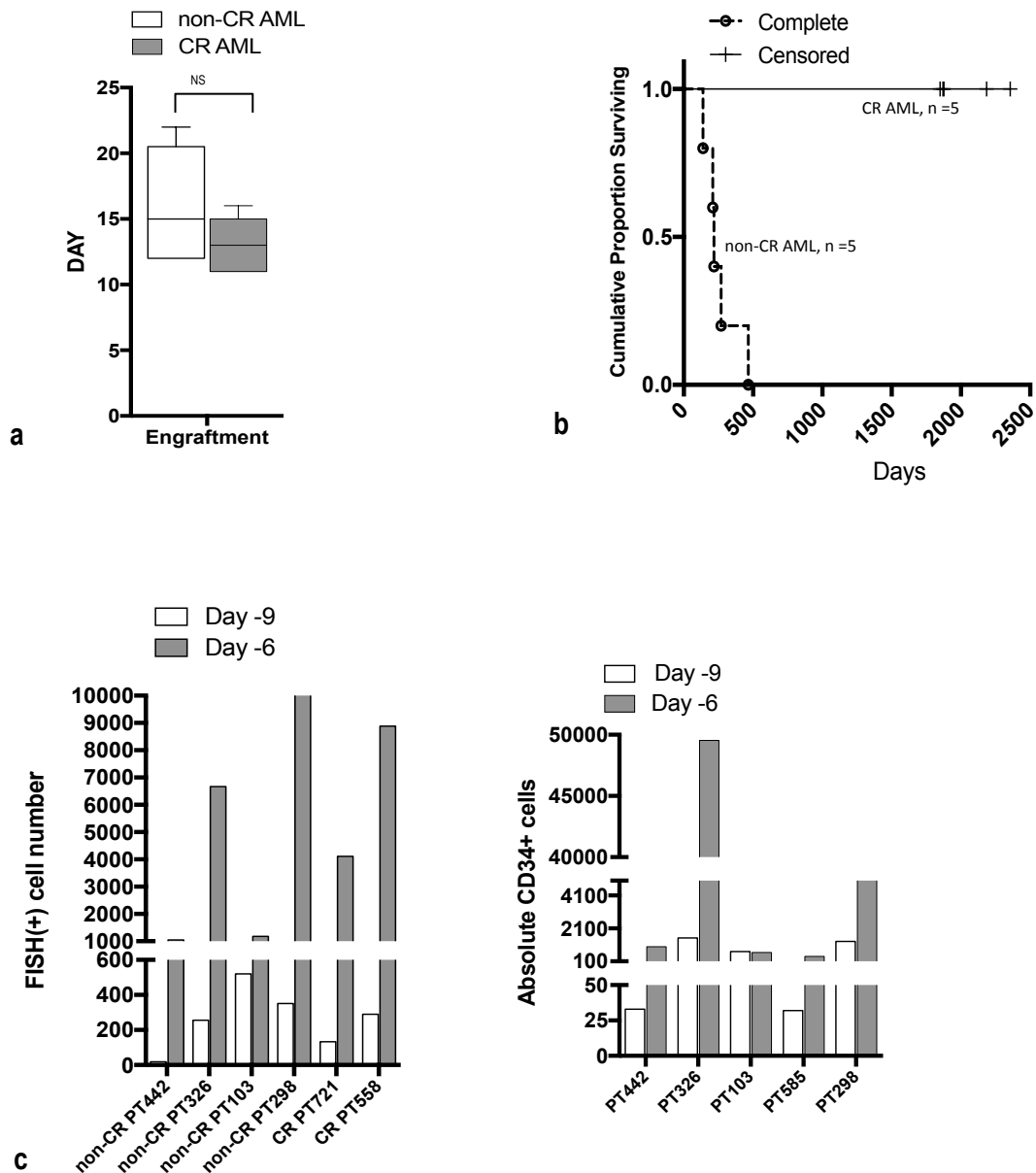


Fig. S1. (associated with Fig. 2.). Clinical characteristics of ten AML patients investigated in this study. **a** Time of engraftment following allogeneic stem cell transplantation in five AML patients who were in complete remission (CR) and those five were not in CR at the time of transplant (non-CR). NS: not significant. **b** Overall survival of five CR and five non-CR AML patients who underwent allogeneic stem cell transplantation, $P = 0.0033$. **c** G-CSF plus plerixafor (G+P) mobilized FISH+ clonal AML cells in four non-CR and two CR AML patients (left) and CD34+ cells in four of five non-CR AML (right). Day -9: baseline. Day -6: post treatment with G+P.

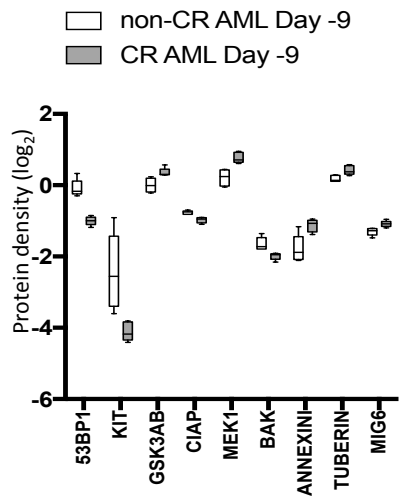
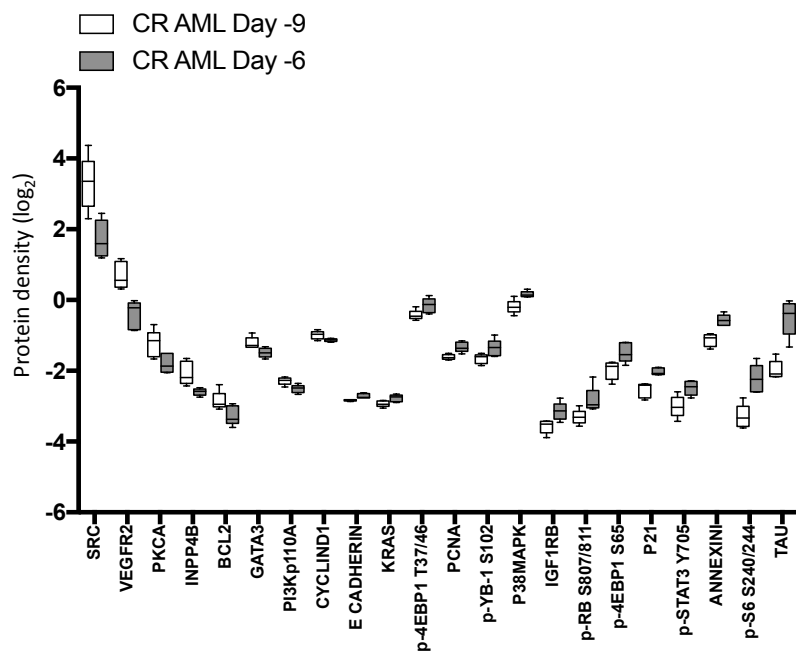
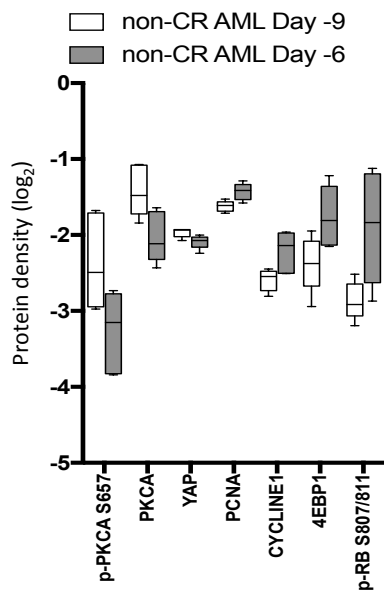


Fig. S2. (associated with Fig. 3.). Differentially expressed proteins in baseline samples in CR and non-CR AML. Significantly differentially expressed proteins in samples from five CR and five non-CR AML patients at baseline (Day -9).

a

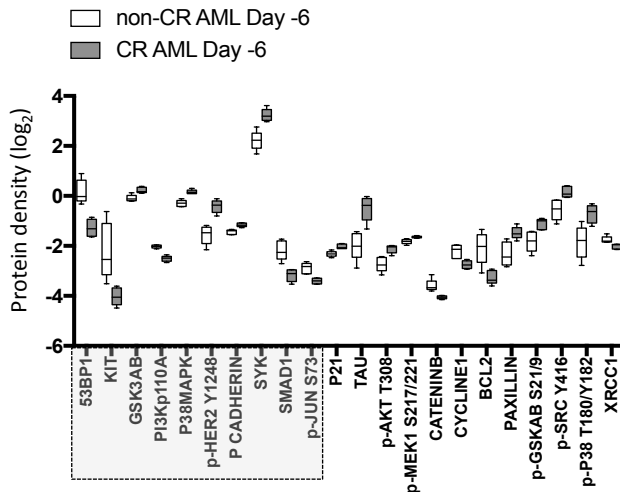


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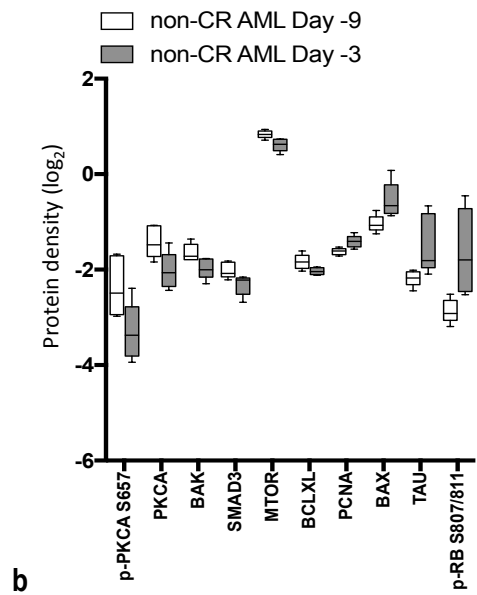
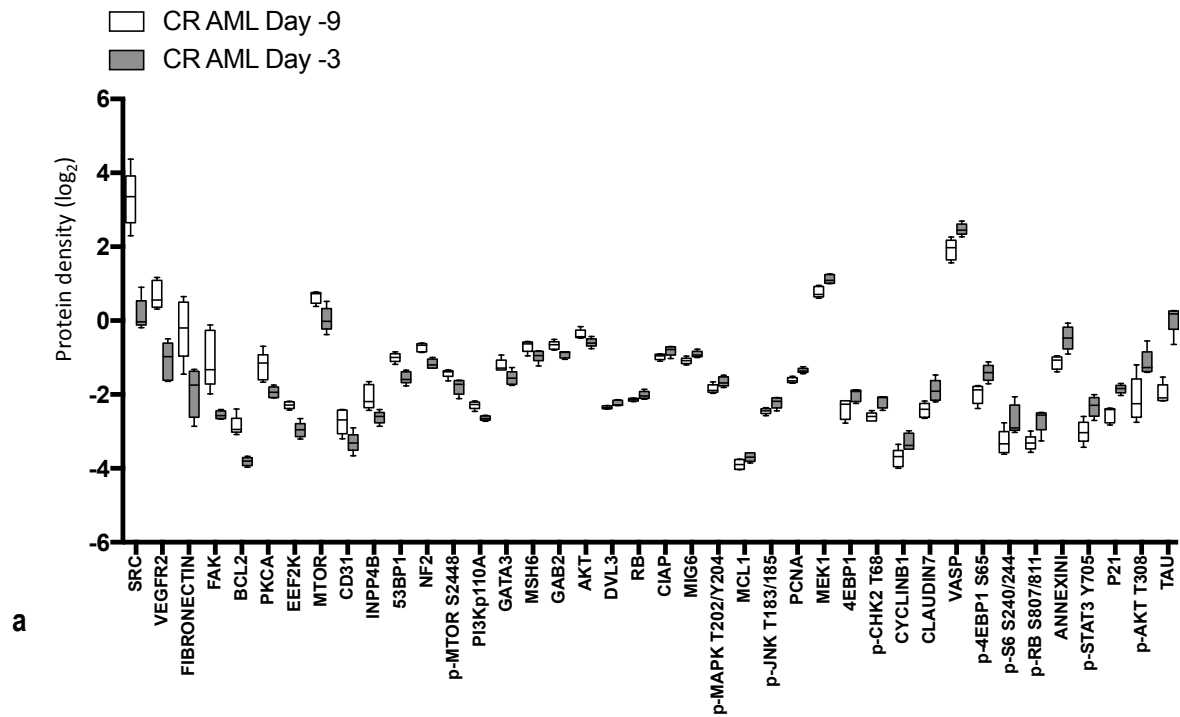
CR AML (Day-6 - Day-9)	Pathway and functional group	non-CR AML (Day-6 - Day-9)
INPP4B PI3Kp110A	AKT/mTOR upstream signaling	
PKCA		p-PKCA S657 PKCA
p-4EBP1 S65 p-4EBP1 T37/46 p-S6 S240/244	AKT/mTOR signaling	4EBP1
KRAS P38MAPK	RAF/RAS/ERK signaling	
SRC	SRC signaling	
p-STAT3 Y705	STAT signaling	
BCL2	BCL-2 protein family	
CYCLIND1	Cell cycle and regulation	
P21		CYCLINE1
p-RB S807/811		p-RB S807/811
PCNA	DNA replication and repair	PCNA
ANNEXINI	Cell death and apoptosis	
GATA3 VEGFR2	RTK signaling and regulation	
IGF1RB	Insulin regulation protein family	
E CADHERIN TAU	Adhesion and regulation	
p-YB-1 S102	Inflammation and regulation	
	YAP and TAZ signaling	YAP

c

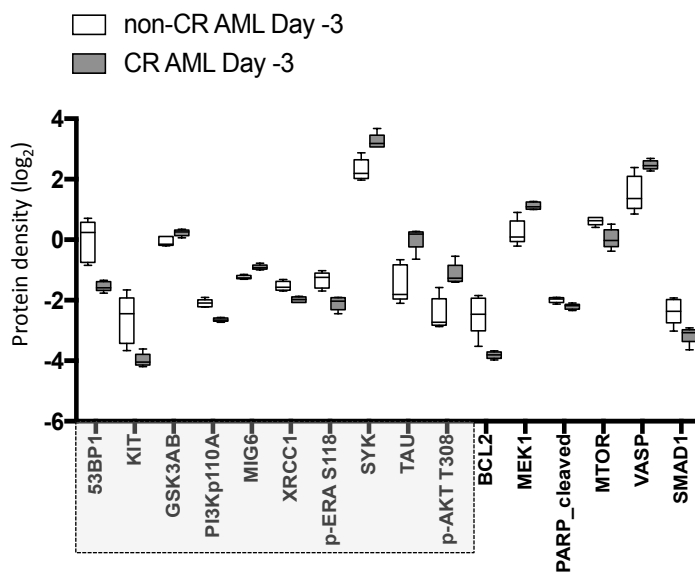


d

Fig. S3. (associated with Fig. 4.). G-CSF/plerixafor mediated protein alterations in CR and non-CR AML. **a-c** G+P (Day -6)-mediated protein alterations in five CR (**a**) and five non-CR samples examined (**b**). The affected proteins and their associated pathway and functional group in both CR and non-CR AML are summarized in the table (**c**). Proteins that were downregulated after treatment are shown in blue, and proteins that were upregulated are shown in pink. **d** Differentially expressed proteins in G+P-treated CR and non-CR AML samples. The ten most distinct proteins are highlighted in the gray rectangle.



CR AML (Day-3 - Day-9)	Pathway and functional group	non-CR AML (Day-3 - Day-9)
INPP4B PI3Kp110A	AKT/mTOR upstream signaling	
PKCA		p-PKCA S657 PKCA
4EBP1 p-4EBP1 S65 AKT p-AKT T308 EEF2K MTOR p-MTOR S2448 p-S6 S240/244	AKT/mTOR signaling	
		MTOR
p-MAPK T202/Y204 MEK1	RAF/RAS/ERK signaling	
SRC	SRC signaling	
p-STAT3 Y705	STAT signaling	
p-JNK T183/185	C-JUN/JNK signaling	
CIAP	SMAC and IAP signaling	
BCL2 MCL1	BCL-2 protein family	
		BAK BAX BCLXL
p-CHK2 T68 CYCLINB1 P21 RB p-RB S807/811	Cell cycle and regulation	
		p-RB S807/811
53BP1 MSH6 PCNA	DNA replication and repair	
		PCNA
ANNEXINI	Cell death and apoptosis	
GAB2 GATA3 MIG6 VEGFR2	RTK signaling and regulation	
CD31 DVL3 FAK TAU	Adhesion and regulation	
		TAU
CLAUDIN7 FIBRONECTIN NF2 VASP	Cellular membrane and structure protein family	
	SMAD signaling	SMAD3



d

Fig. S4. (associated with Fig. 5.). G-CSF/plerixafor/busulfan/fludarabine mediated protein alterations in CR and non-CR AML. **a-c** G+P plus Bu+Flu (Day -3)-mediated protein alterations in five CR (**a**), five non-CR (**b**) samples and the proteins associated pathway and functional group (**c**). **d** Differentially expressed proteins in G+P plus Bu+Flu-treated CR and non-CR AML samples. The ten most distinct proteins are highlighted in the gray rectangle.