CD38 knockout natural killer cells expressing an affinity optimized CD38 chimeric antigen receptor successfully target acute myeloid leukemia with reduced effector cell fratricide

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Supplementary Figure S1:

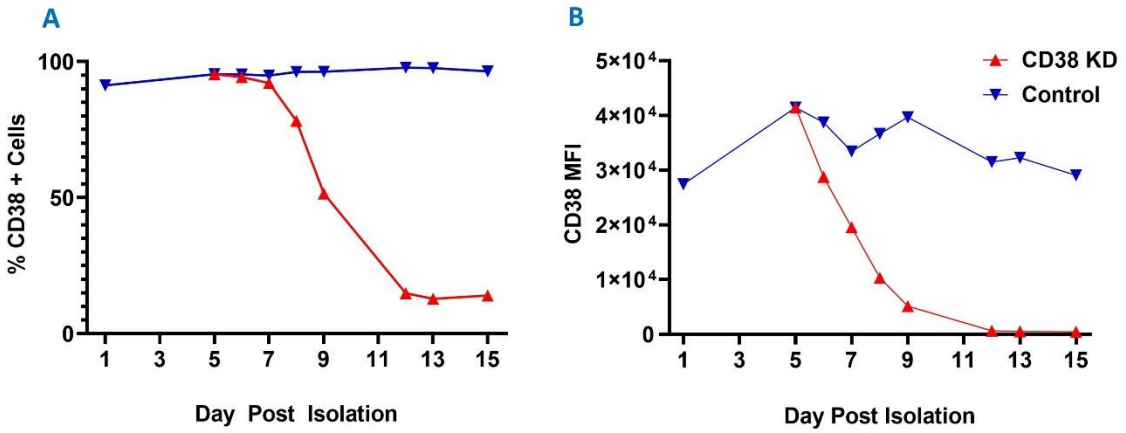

Figure S1: CD38 expression during natural killer (NK) cell expansion and post day 5 CRISPR/Cas9 knockdown (KD) of CD38 gene. (A) depicts percentage CD38 positive NK cells. **(B)** Depicts mean flourescence intensity (MFI) of CD38 expression. CD38 assessed by flow cytometry (CD38 FITC), data from one representative NK cell expansion is presented.

Supplementary Figure S2:

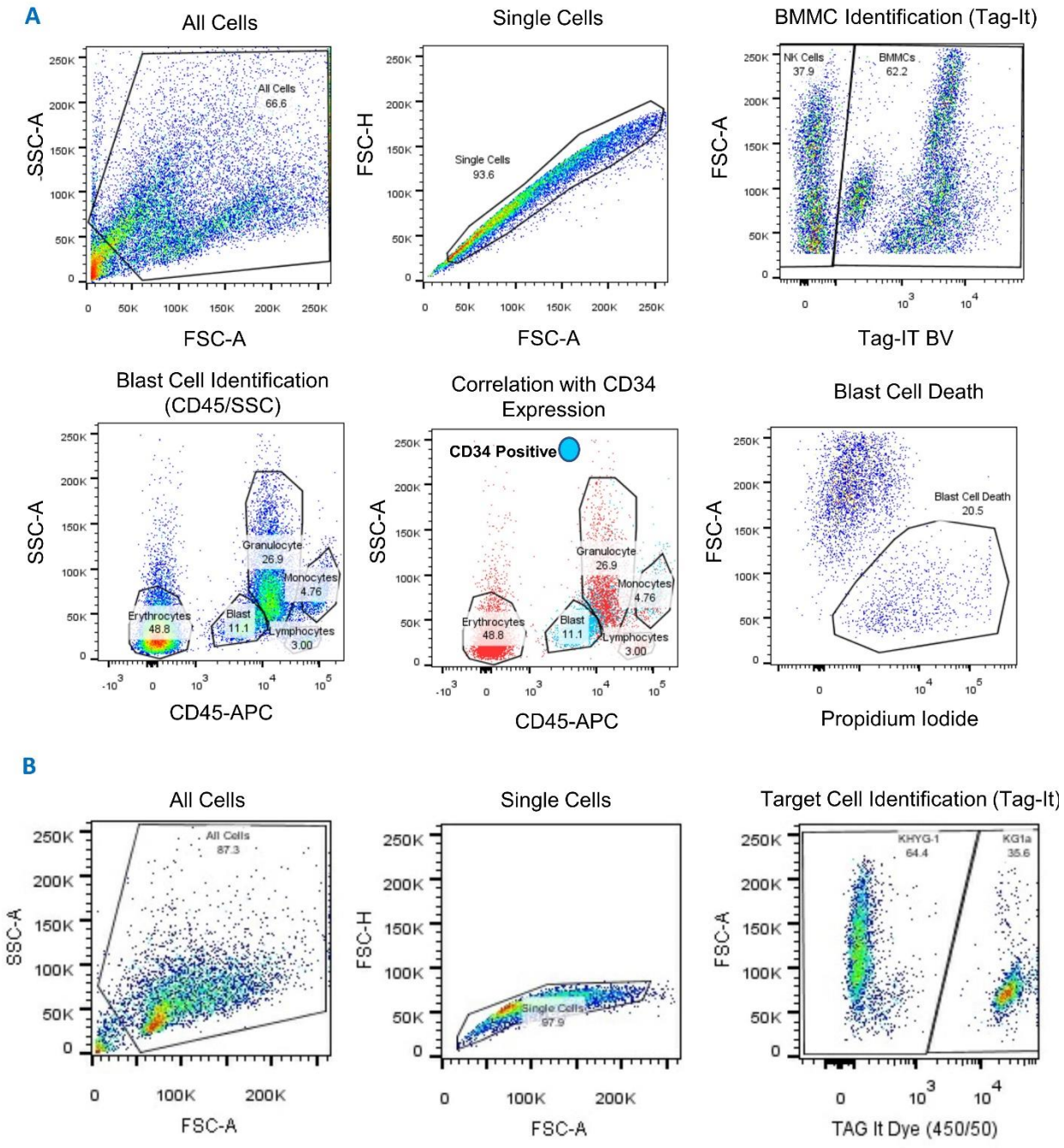

Figure S2: Representative gating strategy in co-culture experiments. (A) Primary AML samples: Effector cell and bone marrow mononuclear cell (BMMC) populations were identified by application of "Tag-It violet" or "Violet Trace" during assay set up. Initial placement of blast cell gate based upon CD45/SSC was refined by comparison with clinical

flow cytometry data. In this example, CD34-FITC was used to adjust appropriate blast cell gate placement. **(B)** Cell line experiments: Target cell lines were differentiated from effector cell populations in co-culture by the application of “Tag-It violet” or “Violet Trace” during assay set up.

Supplementary Table S1:

Case	Age	Gender	WHO Subtype	Karyotype	Immunophenotype	CD38 MFI
1	41	Female	AML with mutated NPM1	Normal	CD13/CD64+	8142
2	71	Male	AML with mutated NPM1	Normal	HLADR/CD117/CD64+	2353
3	43	Female	AML with mutated NPM1	Normal	CD117/CD64+	2468
4	72	Female	AML with Myelodysplasia-related changes	Complex	CD34/CD117/CD56+	1262
5	50	Female	AML with t(9;11); KMT2A-MLLT3	t(9;11)	HLADR/CD64/CD56+	2388
6	77	Male	AML with myelodysplasia-related changes	Normal	CD34/CD117/CD33+	3309
7	66	Male	Acute Myelomonocytic Leukaemia	Trisomy 8	CD34, CD117+ Myeloblast CD14/CD64/HLADR+ Monoblast	1518

Table S1: Primary acute myeloid leukaemia sample data. Demographic information, World Health Organisation (WHO) acute myeloid leukaemia subtype, blast cell immunophenotype and CD38 mean fluorescence intensity (MFI), relating to experiments performed in Figure 4B.