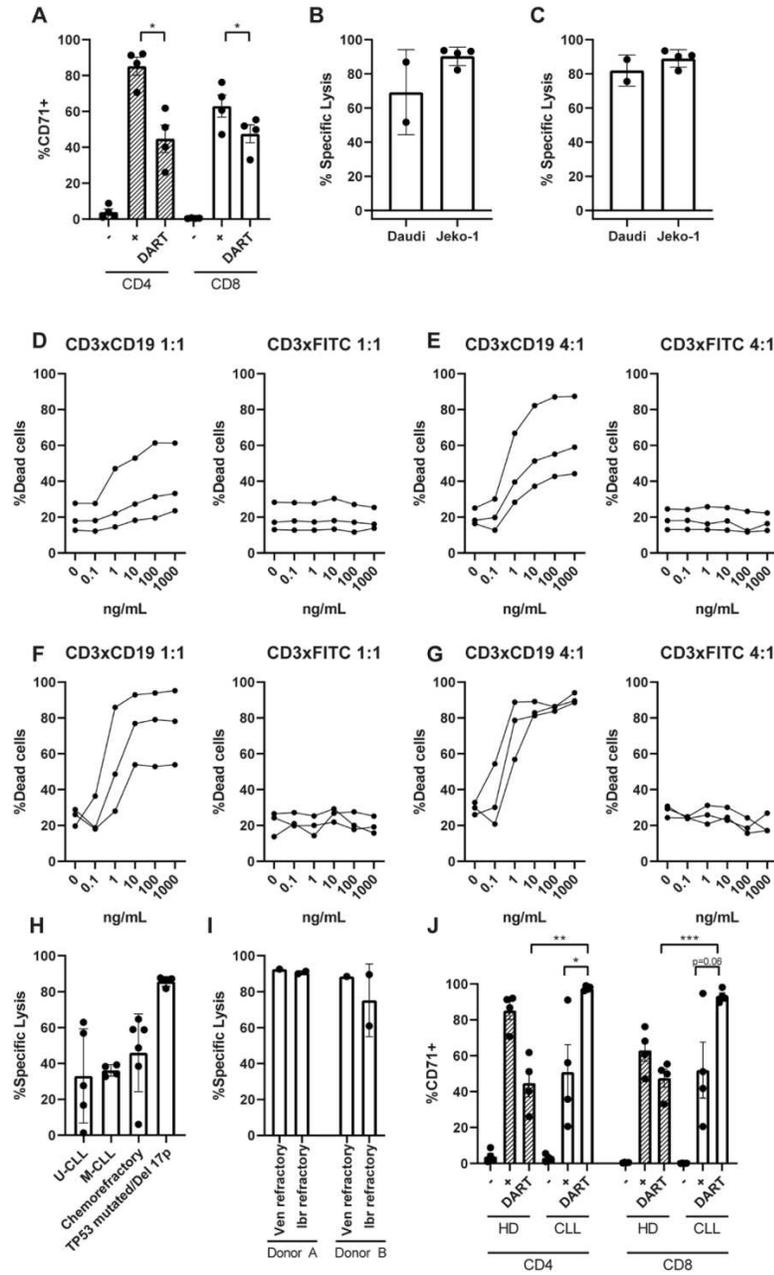


1 **Supplementary figure 1**

2 (A) HD PBMCs were CTV labelled and left unstimulated or in the presence of 100ng/mL
3 CD3xCD19 DART or aCD3/aCD28 antibodies. CD71 expression was measured after 4
4 days. (n=4) (B-C) FACS analysis of lysis of CTV labelled CD19+ cell-lines cocultured
5 with healthy donor T cells in presence of CD3x19 DART. Lysis of Daudi (n=2) and JeKo-
6 1 (n=4) cell-line in 4:1 E:T ratio after 4 days. Figures B and C represent different T cell
7 donors. (D-G) %Dead cells of CTV labelled primary CLL cocultured with healthy donor T
8 cells in presence of CD3xCD19 or CD3xFITC DART. Figure represents raw data from
9 figures 2A-B (D-E) Primary CLL cells cocultured in different 1:1 (D) or 4:1 (E) E:T ratios
10 and with different concentrations of the CD3xFITC and CD3xCD19 DART molecules for
11 24h(n=3) (F-G) Primary CLL cells cocultured in different 1:1 (F) or 4:1 (G) E:T ratios and
12 with different concentrations of the CD3xFITC and CD3xCD19 DART molecules for 4
13 days (n=3). (H-I) FACS analysis of lysis of CTV labelled primary CLL cocultured with
14 healthy donor T cells in presence of CD3xCD19 DART. (H) Lysis of unmutated IGHV
15 (n=5), mutated IGVH (n=4), chemorefractory (n=6) and TP53 mutated/17p deleted (n=4)
16 CLL by HD T cells in 4:1 E:T ratio after 4 days. Figure represents different T cell donor
17 than used in Fig 2C. (I) Lysis of venetoclax refractory (n=1) and ibrutinib refractory (n=2)
18 CLL by HD T cells in 4:1 E:T ratio after 4 days. Donor A and B represent two different T
19 cell donors (J) HD* or CLL PBMCs were CTV labelled and left unstimulated or in the
20 presence of 100ng/mL CD3xCD19 DART or aCD3/aCD28 antibodies. CD71 expression
21 was measured after 4 days. (n=4) *Data from HD PBMCs equal to data in figure S1A.

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Supplemental Figure 1



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68 **Supplementary figure 2**

69 (A) CD40 activation of primary CLL was confirmed by measuring resistance to treatment
 70 with 0.01uM ABT-199 for 24h (n=6). (B) Knock-out of BAX and BAK was confirmed by
 71 western blot in 4 JeKo-1 clones. (C-D) Viability was assessed of 3T3 (dashed bars) or
 72 3T40 treated (empty bars) CLL cells treated for 24h with ABT-199 and QVD (n=3) (C)
 73 for 48h with CD3xCD19 DART and QVD with HD T cells in a 4:1 ratio (D) (n=2-3). (E)
 74 Specific lysis of JeKo-1 cells treated for 24h with 10uM ABT-199 in presence or absence
 75 of QVD or co-cultured with HD T cells in 4:1 ratio and 100ng/mL CD3xCD19 DART for
 76 24h in presence or absence of QVD (n=3-6).

77 **Supplemental Figure 2**

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