**Supplemental Table 1.** Overview of CD20-targeting T-cell bispecific molecules evaluated in the current study.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Format** | **CD20 binder** | **CD3 binder** | **Fc part** | **Structure** |
| 2:1 CD20-TCB | 2:1 | obinutuzumab | huCD3 | P329G LALA |  |
| 1:1 IgG CD20-TCB | 1:1 | obinutuzumab | huCD3 | Aglyco (N297G) |  |
| 1:1 OA CD20-TCB | 1:1 | obinutuzumab | huCD3 | P329G LALA |  |
| VH-A-1242-1250 | 1:1 | VH-A 1242 | VH-A 1250 | IgG4 SPLE |    |

**Supplemental Table 2.** Tumor cell lines and EC50 values of tumor cell lysis.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Toledo** | **U2932** | **Z-138** |
| **CD20 expression level****(\*ABC measured by \*\*QSC)** | 4000 | 15000 | 116000 |
| **EC50 tumor lysis (pM)** |
| 2:1 CD20-TCB  | 0.4 | 7.2 | 4.0 |
| 1:1 IgG CD20-TCB  | 39.6 | 101.7 | 66.9 |
| 1:1 OA CD20-TCB | 13.8 | 94.7 | 19.5 |
| VH-A-1242-1250  | 60.1 | 121.6 | 53.9 |

\*ABC = antibody-binding capacity; \*\*QSC = Quantum™ Simply Cellular® (see methods). The EC50 values are derived from sigmoidal dose-response curves (4-parameter) using values from three donors.

**Supplemental Table 3.** Assessment of the activity in *ex vivo* primary tumor samples derived from aggressive lymphoma and leukemia patients.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Patient ID** | **Indication** | **% tumor cells** | **% residual normal B cells** | **% CD3+ T-cells** | **E:T ratio** | **Pre-treatment** |
| P8 | NHL | 47 | 0.01 | 5.1 | 0.09 | pre-treated (see legend) |
| P10 | NHL | 8.2 | 0.6 | n.d. | n.d. | pre-treated (see legend) |
| P11 | NHL | 13 | 0.5 | n.d. | n.d. | pre-treated (see legend) |
| P15 | NHL | 16.9 | 0.2 | 12.4 | 0.8 | unknown |
| P16 | NHL | 14.5 | 3.8 | 11.2 | 0.5 | unknown |
| P7 | NHL (DLBCL) | 23 | 0.9 | 11.9 | 0.4 | pre-treated (data not available) |
| P2 | NHL (MCL) | 25.3 | 0.1 | 6.4 | 0.2 | no treatment |
| P13 | NHL (MCL) | 43 | 2.1 | 22.4 | 0.5 | unknown |
| P17 | NHL (MCL) | 25 | 0.1 | 2.8 | 0.2 | unknown |
| P5 | NHL (MZL) | 45 | 0.6 | 4.7 | 0.06 | no treatment |
| P9 | NHL (MZL) | 91.9 | not detected | 1.2 | 0.03 | pre-treated (see legend) |
| P3 | NHL (SMZL) | 42.2 | not detected | 11.3 | 0.2 | no treatment |
| P6 | NHL (SMZL) | 82 | 6.8 | 5.1 | 0.06 | pre-treated (data not available) |
| P12 | NHL (SMZL) | 76 | 0.1 | 18.1 | 0.3 | unknown |
| P14 | NHL (SMZL) | 28 | 1.6 | 19.8 | 0.3 | unknown |
| P1 | CLL | n.d. | n.d. | 15.1 | 0.07 | no treatment |
| P4 | CLL-B | 58 | not detected | 1.6 | 0.02 | no treatment |

CLL = chronic lymphatic leukemia; DLBCL = diffuse large b-cell lymphoma; E:T ratio = effector to targeT-cell ratio; MCL = mantle cell lymphoma; NHL = non-hodgkin lymphoma; SMZL = splenic marginal zone lymphoma; n.d = not determined. % Tumor cells refers to the % of malignant B cells in the samle as determined by immunohistochemistry; E:T ratio refers to the ration of CD3+ T-cells to CD20+ B cells (malignant and non-malignant) in the sample.

**Pre-treatments:**

**P8:** Tenofovir 245 mg (at moment of sample extraction), 2 cycles: Cyclophosphamide 1500 mg, Adriamycin 100 mg, Vincristine 2 mg, Rituximab 750 mg, Prednisone 120 mg , 1cycle: Cyclophosphamide 1500mg, Adriamycin 100 mg, Vincristine 2 mg , Rituximab 750 mg, Prednisone 200 mg, 1 cycle: Cyclophosphamide 1425mg, Adriamycin 95 mg, Vincristine 2 mg , Prednisone 190 mg; Lamiduvine; Tenofovir 245 mg; 2 cycles: Cyclophosphamide 1425 mg, Adriamycin 95 mg, Vincristine 2 mg , Prednisone 120 mg

**P9:** R-CHOP x 6 cycles; Ofatumumab x 8 cycles

**P10:** Rituximab 645 mg + Bendamustine 120 mg

**P11:** 6 cycles: Cyclophosphamide 1210 mg, Adriamycin 80 mg, Vincristine 2mg , Rituximab 600 mg, Prednisone 100 mg

**Supplemental Table 4.** Absolute values of cytokines measured by multiplex analysis of blood samples reported as heatmap in Figure 3e, 4b, 5d, and 6b.

| **Group** | **ID** | **Time after injection** | **MIP1b** | **IL6** | **IFNg** | **IL5** | **TNFa** | **IL2** | **MCP-1** | **IL8** | **IL10** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Fig 3e** |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle | A1 | 24 h after 1st | 50.80918 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 4.142438 | 6.865375 |
| Vehicle | A2 | 24 h after 1st | 69.2068 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.60062 | 3.966689 |
| Vehicle | A3 | 24 h after 1st | 74.51692 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 1.411443 | 0.486564 |
| Vehicle | A4 | 24 h after 1st | 78.43626 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.647961 | 2.468916 |
| Vehicle | A5 | 24 h after 1st | 95.21767 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.766865 | 6.149331 |
| Vehicle | A6 | 24 h after 1st | 48.13217 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 1.411443 | 0.458 |
| Vehicle | A7 | 24 h after 1st | 95.21767 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.647961 | 6.149331 |
| CD20-TCB | B1 | 24 h after 1st | 291.175 | 1004.346 | 1996.04 | 7.914772 | 28.42132 | 305.0318 | 336.9023 | 20.07817 | 201.4417 |
| CD20-TCB | B2 | 24 h after 1st | 292.1645 | 409.8559 | 3340.302 | 4.696266 | 21.54958 | 251.9569 | 137.6082 | 11.41404 | 329.1849 |
| CD20-TCB | B3 | 24 h after 1st | 501.5406 | 548.7233 | 1960.429 | 54.15576 | 28.42132 | 277.9775 | 168.6916 | 48.84964 | 568.362 |
| CD20-TCB | B4 | 24 h after 1st | 209.6161 | 171.9798 | 363.1769 | 107.067 | 6.499997 | 106.2751 | 46.31806 | 8.748059 | 206.6877 |
| CD20-TCB | B6 | 24 h after 1st | 214.2021 | 14.75643 | 286.1719 | 45.91957 | 6.546 | 3.871116 | 12.41847 | 3.846708 | 102.7053 |
| CD20-TCB | B7 | 24 h after 1st | 324.2686 | 81.25593 | 640.396 | 50.76006 | 5.935776 | 23.47158 | 118.3283 | 20.48641 | 545.4094 |
| Vehicle | A1 | 3 days after 1st | 35.16658 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 1.411443 | 0.036539 |
| Vehicle | A2 | 3 days after 1st | 55.67737 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.256555 | 2.468916 |
| Vehicle | A3 | 3 days after 1st | 76.76634 | 4.114889 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 3.10085 | 6.149331 |
| Vehicle | A4 | 3 days after 1st | 66.85932 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.035997 | 0.1565 |
| Vehicle | A5 | 3 days after 1st | 82.82235 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.766865 | 3.966689 |
| Vehicle | A6 | 3 days after 1st | 79.67947 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.343284 | 0.148 |
| Vehicle | A7 | 3 days after 1st | 62.2122 | 1.144134 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.343284 | 1.698395 |
| CD20-TCB | B1 | 3 days after 1st | 130.8947 | 85.07517 | 294.7684 | 1.429962 | 6.546 | 3.87 | 8.290902 | 2.189993 | 149.6109 |
| CD20-TCB | B2 | 3 days after 1st | 60.3751 | 24.40565 | 146.7695 | 2.64286 | 6.546 | 3.87 | 3.626699 | 2.343284 | 52.57348 |
| CD20-TCB | B3 | 3 days after 1st | 169.6505 | 120.2423 | 255.9938 | 8.172074 | 6.546 | 3.87 | 26.87335 | 15.01496 | 59.3942 |
| CD20-TCB | B4 | 3 days after 1st | 126.9936 | 74.39031 | 84.11748 | 6.738882 | 6.546 | 3.87 | 7.586889 | 2.647961 | 66.19966 |
| CD20-TCB | B6 | 3 days after 1st | 94.31694 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.950389 | 5.789437 |
| CD20-TCB | B7 | 3 days after 1st | 113.8191 | 11.48274 | 19.08071 | 2.64286 | 6.546 | 3.87 | 5.834234 | 3.549561 | 50.62115 |
| Vehicle | A1 | 10 days after 1st | 118.1119 | 6.622473 | 65.88828 | 2.64286 | 6.546 | 15.29072 | 6.429672 | 9.593913 | 17.25355 |
| Vehicle | A2 | 10 days after 1st | 52.77879 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.431067 | 2.086054 |
| Vehicle | A3 | 10 days after 1st | 61.44948 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.358 | 1.577 |
| Vehicle | A4 | 10 days after 1st | 60.3751 | 10.98283 | 38.0976 | 2.64286 | 6.546 | 4.342238 | 4.600682 | 3.549561 | 17.59261 |
| Vehicle | A5 | 10 days after 1st | 32.41333 | 1.489787 | 14.21737 | 2.64286 | 6.546 | 0.830493 | 4.600682 | 1.411443 | 3.22352 |
| Vehicle | A6 | 10 days after 1st | 49.14318 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.072132 | 0.036539 |
| Vehicle | A7 | 10 days after 1st | 59.13752 | 1.02726 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 3.400411 | 1.256 |
| CD20-TCB | B1 | 10 days after 1st | 26.57316 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.766865 | 6.149331 |
| CD20-TCB | B2 | 10 days after 1st | 11.29772 | 1.489787 | 9.279539 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.431067 | 0.036539 |
| CD20-TCB | B3 | 10 days after 1st | 22.97513 | 1.716861 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 0.072132 | 1.698395 |
| CD20-TCB | B4 | 10 days after 1st | 59.2928 | 0.790307 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 1.725612 | 2.847864 |
| CD20-TCB | B6 | 10 days after 1st | 133.3968 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 4.600682 | 2.950389 | 6.149331 |
| CD20-TCB | B7 | 10 days after 1st | 42.22157 | 1.489787 | 38.0976 | 2.64286 | 6.546 | 3.87 | 0.56735 | 1.725612 | 15.89396 |
| **Fig 4 b** |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle | A1 |  | 492.0093 | 6.797852 | 27.36573 | 8.744385 | 6.694824 | 17.51207 | 127.6637 | 34.75289 | 343.3193 |
| Vehicle | A2 |  | 415.7839 | 6.797852 | 9.695557 | 8.744385 | 6.694824 | 18.57051 | 175.5257 | 5.144775 | 481.3267 |
| Vehicle | A3 |  | 576.176 | 6.797852 | 9.695557 | 8.744385 | 6.694824 | 30.7714 | 165.4045 | 5.144775 | 343.3193 |
| Vehicle | A4 |  | 539.3518 | 6.797852 | 9.695557 | 8.744385 | 6.694824 | 3.726869 | 66.35166 | 5.144775 | 301.4058 |
| Vehicle | A5 |  | 229.3413 | 6.797852 | 9.695557 | 8.744385 | 6.694824 | 2.465088 | 62.50524 | 5.144775 | 223.7745 |
| 0.5 mg/kg | B1 |  | 3229.073 | 967.1956 | 1386.252 | 1217.414 | 159.1558 | 626.089 | 2740.448 | 276.983 | 22762.22 |
| 0.5 mg/kg | B2 |  | 1123.796 | 133.8523 | 215.2915 | 654.4272 | 6.694824 | 19.62095 | 446.6006 | 119.6377 | 5947.475 |
| 0.5 mg/kg | B3 |  | 3526.726 | 325.6865 | 293.3934 | 340.8592 | 62.85655 | 133.3646 | 1667.257 | 364.9362 | 14255.48 |
| 0.5 mg/kg | B4 |  | 2874.361 | 683.2626 | 792.9897 | 317.0625 | 41.97262 | 528.9764 | 2152.949 | 232.9583 | 6580.067 |
| 0.5 mg/kg | B5 |  | 3563 | 774.1818 | 959.168 | 773.7987 | 254.6941 | 545.0428 | 2985.913 | 456.5597 | 37197.55 |
| 0.15 mg/kg | C1 |  | 2055.437 | 381.381 | 316.136 | 645.6121 | 45.06369 | 181.7796 | 2164.929 | 214.2916 | 16548.51 |
| 0.15 mg/kg | C2 |  | 3396.566 | 517.8848 | 1804.183 | 107.6866 | 57.04961 | 311.3304 | 1829.825 | 447.2036 | 17207.7 |
| 0.15 mg/kg | C3 |  | 2664.435 | 1111.808 | 1034.272 | 1171.223 | 166.4176 | 340.8913 | 2559.478 | 381.8695 | 24034.7 |
| 0.15 mg/kg | C4 |  | 3077.278 | 488.9452 | 895.8505 | 8.744385 | 116.7941 | 722.4708 | 1182.424 | 374.2481 | 24555.37 |
| 0.15 mg/kg | C5 |  | 2817.046 | 836.5998 | 2338.616 | 78.71109 | 171.2291 | 906.4316 | 2747.228 | 389.07 | 10252.61 |
| 0.05 mg/kg | D1 |  | 1582.719 | 527.502 | 792.9897 | 8.744385 | 57.04961 | 310.9404 | 1827.164 | 145.9843 | 6435.326 |
| 0.05 mg/kg | D2 |  | 2286.332 | 223.8293 | 215.2915 | 350.2979 | 45.06369 | 256.8335 | 1101.708 | 178.5377 | 14669.54 |
| 0.05 mg/kg | D3 |  | 649.5903 | 6.797852 | 38.25055 | 8.744385 | 6.694824 | 35.65749 | 62.50524 | 4.464108 | 796.8622 |
| 0.05 mg/kg | D4 |  | 1569.33 | 175.0724 | 301.005 | 353.4092 | 45.06369 | 130.4456 | 796.1193 | 146.8443 | 12519.25 |
| 0.05 mg/kg | D5 |  | 971.4663 | 66.05288 | 247.0063 | 100.4239 | 6.694824 | 127.5203 | 258.345 | 21.85179 | 6635.263 |
| **Fig 5d** |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle | A1 | 24 h after 1st | 168.2587 | 9.804108 | 0.752168 | 8.744385 | 10.89605 | 8.750705 | 51.5496 | 8.275813 | 144.6906 |
| Vehicle | A2 | 24 h after 1st | 393.6765 | 20.91991 | 26.86096 | 8.744385 | 16.60856 | 33.15077 | 81.35627 | 13.41979 | 334.4833 |
| Vehicle | A3 | 24 h after 1st | 176.6453 | 11.59854 | 0.752168 | 8.744385 | 12.31337 | 12.95488 | 74.3842 | 8.907321 | 219.5408 |
| Vehicle | A4 | 24 h after 1st | 380.1425 | 25.10112 | 43.00684 | 17.11167 | 13.73835 | 18.14746 | 93.01655 | 15.26284 | 226.3234 |
| Vehicle | A5 | 24 h after 1st | 244.7961 | 9.548375 | 21.11804 | 8.744385 | 8.786504 | 22.49051 | 67.13615 | 11.33857 | 192.3771 |
| CD20-TCB | B1 | 24 h after 1st | 2121.439 | 483.6467 | 589.2628 | 64.1171 | 63.00689 | 254.1768 | 2372.808 | 243.2506 | 11834.25 |
| CD20-TCB | B2 | 24 h after 1st | 1875.921 | 542.8547 | 506.3036 | 116.7951 | 49.27668 | 94.17023 | 1495.806 | 206.8652 | 8737.19 |
| CD20-TCB | B3 | 24 h after 1st | 2251.09 | 559.493 | 403.4386 | 375.6926 | 106.5402 | 309.1347 | 2008.386 | 183.4639 | 25850.86 |
| CD20-TCB | B4 | 24 h after 1st | 2165.503 | 634.7887 | 1159.347 | 226.6593 | 114.416 | 1009.018 | 1666.152 | 318.8244 | 16833.39 |
| CD20-TCB | B5 | 24 h after 1st | 2233.248 | 845.5764 | 1121.415 | 28.37894 | 64.54181 | 231.5238 | 3188.424 | 510.9962 | 13138.74 |
| GAZYVA | C1 | 24 h after 1st | 205.8327 | 10.06 | 21.11804 | 8.744385 | 15.17029 | 20.15308 | 53.59603 | 8.275813 | 144.6906 |
| GAZYVA | C2 | 24 h after 1st | 256.8183 | 16.2422 | 15.08249 | 8.744385 | 15.88866 | 27.15878 | 97.83608 | 13.15811 | 151.5164 |
| GAZYVA | C3 | 24 h after 1st | 365.8094 | 63.39486 | 58.12775 | 8.744385 | 20.95682 | 83.89753 | 265.3335 | 12.37563 | 933.2711 |
| GAZYVA | C4 | 24 h after 1st | 271.3354 | 9.548375 | 15.08249 | 8.744385 | 10.89605 | 16.64178 | 4.603027 | 8.907321 | 205.9659 |
| GAZYVA | C5 | 24 h after 1st | 324.4953 | 16.2422 | 9.695557 | 8.744385 | 15.17029 | 26.82559 | 81.35627 | 9.542464 | 141.2758 |
| GAZYVA | D1 | 24 h after 1st | 262.3902 | 14.17362 | 15.08249 | 8.744385 | 13.73835 | 27.49194 | 67.13615 | 9.66991 | 158.3374 |
| GAZYVA | D2 | 24 h after 1st | 232.1393 | 10.57225 | 0.752168 | 8.744385 | 13.73835 | 8.750705 | 74.3842 | 9.287984 | 151.5164 |
| GAZYVA | D3 | 24 h after 1st | 176.2304 | 7.763079 | 9.695557 | 8.744385 | 10.89605 | 3.841462 | 100.9972 | 12.63602 | 151.5164 |
| GAZYVA | D4 | 24 h after 1st | 195.2732 | 10.06 | 8.571843 | 8.744385 | 14.45349 | 10.43463 | 53.59603 | 8.401813 | 158.3374 |
| GAZYVA | D5 | 24 h after 1st | 285.8545 | 14.17362 | 86.54161 | 8.744385 | 12.31337 | 24.82565 | 74.3842 | 11.98587 | 168.5603 |
| Vehicle | A1 | 24 h after 2nd | 145.46 | 6.493699 | 9.695557 | 8.744385 | 12.31337 | 1.273216 | 25.86054 | 7.398244 | 79.54228 |
| Vehicle | A2 | 24 h after 2nd | 181.5892 | 9.548375 | 9.695557 | 8.744385 | 13.73835 | 2.465088 | 23.04074 | 8.024276 | 48.40389 |
| Vehicle | A3 | 24 h after 2nd | 249.7775 | 34.57409 | 0.752168 | 8.744385 | 11.6037 | 14.12907 | 139.1989 | 23.07751 | 212.755 |
| Vehicle | A4 | 24 h after 2nd | 282.8426 | 28.77512 | 37.76628 | 8.744385 | 9.487312 | 2.98894 | 55.61072 | 10.82287 | 131.0234 |
| Vehicle | A5 | 24 h after 2nd | 185.662 | 7.508783 | 9.695557 | 8.744385 | 13.73835 | 1.100424 | 36.07981 | 8.65427 | 89.873 |
| CD20-TCB | B1 | 24 h after 2nd | 306.5709 | 28.24945 | 9.695557 | 8.744385 | 10.19055 | 24.49218 | 97.83608 | 42.65106 | 188.9777 |
| CD20-TCB | B2 | 24 h after 2nd | 244.7961 | 28.24945 | 9.695557 | 8.744385 | 13.73835 | 0.579648 | 77.90175 | 15.26284 | 185.5773 |
| CD20-TCB | B3 | 24 h after 2nd | 267.9105 | 24.5774 | 21.11804 | 8.744385 | 13.02495 | 11.10731 | 88.09533 | 15.66023 | 246.6531 |
| CD20-TCB | B4 | 24 h after 2nd | 157.054 | 11.59854 | 0.752168 | 8.744385 | 11.6037 | 2.465088 | 38.44127 | 12.37563 | 110.479 |
| CD20-TCB | B5 | 24 h after 2nd | 239.7693 | 79.06421 | 15.08249 | 8.744385 | 16.60856 | 0.229113 | 114.7733 | 52.39991 | 151.5164 |
| GAZYVA | C1 | 24 h after 2nd | 101.1716 | 6.493699 | 9.695557 | 8.744385 | 12.31337 | 2.465088 | 9.541628 | 6.652623 | 55.34616 |
| GAZYVA | C2 | 24 h after 2nd | 126.7045 | 7.508783 | 9.695557 | 8.744385 | 10.89605 | 2.465088 | 23.04074 | 6.776447 | 55.34616 |
| GAZYVA | C3 | 24 h after 2nd | 292.1685 | 57.75149 | 9.695557 | 8.744385 | 15.17029 | 92.5132 | 212.9768 | 10.05306 | 716.5799 |
| GAZYVA | C4 | 24 h after 2nd | 135.2973 | 7.508783 | 9.695557 | 8.744385 | 10.89605 | 4.691629 | 16.89013 | 7.523121 | 110.479 |
| GAZYVA | C5 | 24 h after 2nd | 184.8507 | 5.987515 | 9.695557 | 8.744385 | 10.89605 | 11.44347 | 81.35627 | 9.415155 | 110.479 |
| CD20-TCB | D1 | 24 h after 2nd | 416.2129 | 175.3626 | 475.8643 | 8.744385 | 15.17029 | 45.11169 | 402.1689 | 127.5982 | 515.9301 |
| CD20-TCB | D2 | 24 h after 2nd | 423.6182 | 377.0514 | 184.3481 | 8.744385 | 18.05268 | 6.724887 | 636.5168 | 287.0007 | 729.9316 |
| CD20-TCB | D3 | 24 h after 2nd | 259.2625 | 159.9897 | 95.62989 | 8.744385 | 15.17029 | 9.424688 | 563.5665 | 234.3429 | 596.2839 |
| CD20-TCB | D4 | 24 h after 2nd | 262.3902 | 89.39062 | 37.76628 | 11.31524 | 10.89605 | 0.579648 | 160.7667 | 27.35215 | 739.9437 |
| CD20-TCB | D5 | 24 h after 2nd | 333.3018 | 89.93535 | 122.0644 | 30.34039 | 15.17029 | 36.14344 | 203.4217 | 76.60897 | 2143.113 |
| **Fig 6b** |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle | A1 | 24 h after 1st | 64.62364 | 17.06785 | 5.539911 | 17.85634 | 16.92944 | 9.405329 | 128.3287 | 18.73297 | 32.10452 |
| Vehicle | A2 | 24 h after 1st | 54.12031 | 10.25299 | 83.23569 | 20.80315 | 13.10577 | < 2.46508789 | 60.65272 | 11.48667 | 25.41789 |
| Vehicle | A3 | 24 h after 1st | 111.5458 | 11.52568 | 58.1172 | 7.190398 | 15.01338 | 4.572425 | 74.02966 | 13.4053 | 29.84623 |
| Vehicle | A4 | 24 h after 1st | 34.85835 | 8.994571 | 107.9841 | < 8.74438476 | 13.10577 | < 2.4650878 | 52.85993 | 11.75781 | 24.69196 |
| Vehicle | A5 | 24 h after 1st | 31.98133 | 8.838348 | 5.539911 | 11.20903 | 13.10577 | < 2.46508789 | 32.53038 | 11.21657 | 24.33035 |
| 0.15 CD20-TCB | B1 | 24 h after 1st | 1564.743 | 106.6921 | 642.9299 | 38.17746 | 40.36736 | 156.0081 | 1244.332 | 115.8691 | 674.0054 |
| 0.15 CD20-TCB | B2 | 24 h after 1st | 655.6302 | 96.0772 | 415.1899 | 129.5196 | 28.56284 | 91.38581 | 576.9145 | 69.96921 | 637.4653 |
| 0.15 CD20-TCB | B3 | 24 h after 1st | 101.9802 | 14.76197 | 120.2508 | 240.1001 | 20.78346 | 6.621301 | 65.32279 | 14.14838 | 326.4425 |
| 0.15 CD20-TCB | B4 | 24 h after 1st | 1273.314 | 167.0745 | 415.1899 | 181.0509 | 56.29236 | 47.30393 | 858.4335 | 215.1817 | 1306.382 |
| 0.15 CD20-TCB | B5 | 24 h after 1st | 709.1529 | 42.11204 | 518.2732 | 33.61667 | 34.44751 | 95.06966 | 762.1701 | 46.08483 | 626.6406 |
| 0.05 CD20-TCB | C1 | 24 h after 1st | 216.7534 | 25.86687 | 180.7799 | 190.4063 | 24.66249 | 24.42392 | 201.7822 | 29.70232 | 174.7072 |
| 0.05 CD20-TCB | C2 | 24 h after 1st | 125.6566 | 21.42529 | 204.6947 | 65.67362 | 18.85304 | 34.12936 | 294.7752 | 24.7275 | 252.8446 |
| 0.05 CD20-TCB | C3 | 24 h after 1st | 104.3845 | 17.06785 | 132.4566 | 119.926 | 16.92944 | 1.544259 | 128.0383 | 81.97564 | 39.82464 |
| 0.05 CD20-TCB | C4 | 24 h after 1st | 709.1529 | 35.66845 | 461.1425 | 11.20903 | 37.40337 | 59.90105 | 427.0041 | 38.29574 | 342.3426 |
| 0.05 CD20-TCB | C5 | 24 h after 1st | 186.4899 | 27.59499 | 180.7799 | 17.85634 | 15.01338 | 20.02313 | 228.7485 | 45.63354 | 127.7793 |
| 0.015 CD20-TCB | D1 | 24 h after 1st | 190.8586 | 27.24854 | 180.7799 | 20.80315 | 20.78346 | 24.0596 | 213.4826 | 26.57571 | 123.4704 |
| 0.015 CD20-TCB | D2 | 24 h after 1st | 94.71176 | 17.73216 | 107.9841 | 28.78334 | 18.85304 | 10.57672 | 139.7972 | 15.65335 | 73.53832 |
| 0.015 CD20-TCB | D3 | 24 h after 1st | 155.421 | 16.40592 | 32.43762 | 23.58561 | 15.01338 | 1.996126 | 123.0721 | 21.69674 | 41.40176 |
| 0.015 CD20-TCB | D4 | 24 h after 1st | 64.62364 | 9.936988 | 32.43762 | 23.58561 | 15.97042 | 8.221877 | 136.6709 | 13.03621 | 57.70566 |
| 0.015 CD20-TCB | D5 | 24 h after 1st | 116.2794 | 16.07587 | 107.9841 | 11.20903 | 13.10577 | 6.621301 | 175.6941 | 35.46453 | 83.69417 |
| GAZYVA  | E1 | 24 h after 1st | 99.56684 | 10.25299 | 32.43762 | 1.653058 | 23.69061 | 0.070391 | 68.84591 | 14.42868 | 30.97185 |
| GAZYVA  | E2 | 24 h after 1st | 6.578443 | 11.52568 | 58.1172 | 11.20903 | 16.92944 | 1.314145 | 87.67719 | 14.70986 | 29.84623 |
| GAZYVA  | E3 | 24 h after 1st | 69.77208 | 10.25299 | 58.1172 | 17.85634 | 13.10577 | 4.98749 | 73.34506 | 12.66879 | 27.61685 |
| GAZYVA  | E4 | 24 h after 1st | 54.12031 | 8.838348 | 58.1172 | < 8.74438476 | 16.92944 | < 2.46508789 | 45.4857 | 11.39652 | 26.1474 |
| GAZYVA  | E5 | 24 h after 1st | 155.421 | 14.59847 | 58.1172 | 11.20903 | 13.10577 | 13.27152 | 99.14926 | 16.51041 | 29.09982 |
| Vehicle | A1 | 24 h after 2nd | 702.0535 | 88.67737 | 67.9557 | 40.37443 | 20.78346 | 9.405329 | 390.0349 | 20.80146 | 257.7184 |
| Vehicle | A2 | 24 h after 2nd | 127.9833 | 11.52568 | 32.43762 | 17.85634 | 16.92944 | 4.98749 | 83.09444 | 16.31932 | 34.39038 |
| Vehicle | A3 | 24 h after 2nd | 318.1033 | 11.37051 | 59.74977 | 23.58561 | 15.01338 | 4.154153 | 98.83609 | 43.04878 | 26.8804 |
| Vehicle | A4 | 24 h after 2nd | 123.3231 | 30.38093 | 180.7799 | 7.190398 | 16.92944 | 8.617821 | 85.72222 | 28.02779 | 30.97185 |
| Vehicle | A5 | 24 h after 2nd | 168.8469 | 30.55587 | 107.9841 | 11.20903 | 14.05846 | < 2.46508789 | 79.10475 | 17.18203 | 23.96966 |
| 0.5 CD20-TCB | B1 | 24 h after 2nd | 77.38425 | 16.07587 | 107.9841 | 35.92698 | 18.85304 | 5.809217 | 41.86025 | 14.52231 | 30.59585 |
| 0.5 CD20-TCB | B2 | 24 h after 2nd | 54.12031 | 14.92564 | 156.7094 | 11.20903 | 15.97042 | < 2.46508789 | 47.46065 | 17.85791 | 47.00171 |
| 0.5 CD20-TCB | B3 | 24 h after 2nd | 92.26941 | 29.85667 | 192.7553 | 7.190398 | 15.97042 | < 2.46508789 | 54.74621 | 30.01803 | 32.10452 |
| 0.5 CD20-TCB | B4 | 24 h after 2nd | 74.86069 | 15.74643 | 58.1172 | 11.20903 | 15.01338 | < 2.46508789 | 142.9037 | 14.8978 | 28.35667 |
| 0.5 CD20-TCB | B5 | 24 h after 2nd | 190.8586 | 36.02372 | 120.2508 | 23.58561 | 16.92944 | 3.732279 | 97.89483 | 37.74855 | 28.35667 |
| 0.5 CD20-TCB | C1 | 24 h after 2nd | 208.1793 | 46.64354 | 252.1325 | 155.5105 | 18.85304 | 9.797043 | 175.6941 | 99.38323 | 358.3744 |
| 0.5 CD20-TCB | C2 | 24 h after 2nd | 340.1027 | 57.50142 | 322.5005 | 17.85634 | 15.01338 | < 2.46508789 | 81.77112 | 120.4852 | 61.07232 |
| 0.5 CD20-TCB | C3 | 24 h after 2nd | 344.0781 | 53.9812 | 461.1425 | 74.33711 | 13.10577 | 4.572425 | 98.20888 | 105.6936 | 210.7904 |
| 0.5 CD20-TCB | C4 | 24 h after 2nd | 338.1122 | 62.72715 | 322.5005 | 76.0198 | 20.78346 | 7.425163 | 145.4314 | 100.409 | 731.1408 |
| 0.5 CD20-TCB | D1 | 24 h after 2nd | 864.5333 | 60.10876 | 392.1218 | 42.52313 | 18.85304 | 16.86148 | 291.0376 | 148.3784 | 960.2361 |
| 0.5 CD20-TCB | D2 | 24 h after 2nd | 1514.081 | 192.5525 | 529.6614 | 88.98379 | 34.44751 | 24.78783 | 671.2058 | 139.7857 | 1150.991 |
| 0.5 CD20-TCB | D3 | 24 h after 2nd | 730.3862 | 63.8526 | 368.9874 | 177.4933 | 26.61019 | 33.41794 | 681.643 | 53.28476 | 1452.885 |
| 0.5 CD20-TCB | D4 | 24 h after 2nd | 125.6566 | 51.21758 | 392.1218 | 44.62795 | 24.66249 | 11.54485 | 160.6236 | 38.95405 | 219.1987 |
| 0.5 CD20-TCB | D5 | 24 h after 2nd | 719.7816 | 240.74 | 844.478 | 564.8601 | 41.35706 | 107.4162 | 688.0568 | 126.8644 | 1987.965 |
| 0.5 CD20-TCB | E1 | 24 h after 2nd | 137.2246 | 18.73291 | 299.1367 | 23.58561 | 16.92944 | 10.18749 | 159.2594 | 41.16136 | 58.54425 |
| 0.5 CD20-TCB | E2 | 24 h after 2nd | 82.39281 | 16.40592 | 107.9841 | 11.20903 | 15.01338 | 1.544259 | 87.02701 | 24.31974 | 31.34863 |
| 0.5 CD20-TCB | E3 | 24 h after 2nd | 195.2114 | 21.42529 | 83.23569 | 14.69086 | 16.92944 | 4.154153 | 103.5034 | 47.10285 | 49.84613 |
| 0.5 CD20-TCB | E4 | 24 h after 2nd | 111.5458 | 46.46144 | 228.4737 | 31.23871 | 15.01338 | < 2.4650878 | 80.77437 | 37.20265 | 34.77395 |
| 0.5 CD20-TCB | E5 | 24 h after 2nd | 303.9783 | 85.19344 | 461.1425 | 33.61667 | 15.01338 | 4.154153 | 105.3529 | 103.4969 | 55.20251 |

ID = patient identification; IFN = interferon; IL = interleukin; MCP = monocyte chemoattractant protein; MIP = macrophage inflammatory protein; TNF = tumor necrosis factor..

**Supplemental Table 5.** Average score of perivascular CD3 positive T-cells in the lung (assessed by blinded pathologist analysis) referring to T-cell staining of lungs from tumor-bearing, HSC NSG mice 7 days after the first treatment and 24 h after the second treatment (treatment groups are indicated on Figure 6D panels).

|  |  |
| --- | --- |
| **7 days after the 1st treatment** | **24 h after the 2nd treatment** |
| **Group** | **Score** | **Group** | **Score** |
| Vehicle | 0.75 | Vehicle | 0 |
| Vehicle | 0.75 | CD20-TCB 0.5 mg/kg | 1.5 |
| CD20-TCB 0.5 mg/kg | 3 | - | - |
| CD20-TCB 0.15 mg/kg | 1.75 | CD20-TCB 0.5 mg/kg | 1.7 |
| CD20-TCB 0.05 mg/kg | 1.5 | CD20-TCB 0.5 mg/kg | 2.5 |
| CD20-TCB 0.015 mg/kg | 0.5 | CD20-TCB 0.5 mg/kg | 2.3 |
| Obinutuzumab 10 mg/kg | 0.25 | CD20-TCB 0.5 mg/kg | 0.5 |