

**Supplementary Table 3: Dataset presentation.**

<b>Dataset DOI</b>	<b>Sorting strategy</b>	<b>Protocol / Chemistry</b>	<b>Number of samples</b>	<b>Number of cells after filtering</b>	<b>GSE number Sample ID / HCMV status</b>
<b>Dataset 1</b> Crinier 2018, DOI: 10.1016/j.immuni.2018.09.009.	CD3 <sup>-</sup> , CD14 <sup>-</sup> , CD19 <sup>-</sup> , CD45 <sup>+</sup> , CD56 <sup>+</sup>	3' V2	1	1,467	<b>GSE119562</b> GSM3377678
<b>Dataset 2</b> Yang 2019, DOI: 10.1038/s41467-019-11947-7	CD3 <sup>-</sup> , CD19 <sup>-</sup> , CD14 <sup>-</sup> , CD7 <sup>+</sup>	3' V2	2	2,807	<b>GSE130430</b> GSM3738542 GSM3738543
<b>Dataset 3</b> Witkowski 2021, DOI: 10.1038/s41586-021-04142-6	CD3 <sup>-</sup> , CD19 <sup>-</sup> , CD14 <sup>-</sup> , CD45 <sup>+</sup> , CD56 <sup>+</sup>	5' V2	5	7,569	<b>GSE184329</b> GSM5584154 GSM5584155 GSM5584156_1 GSM5584156_2 GSM5584156_3
<b>Dataset 4</b> Rückert 2022, DOI: 10.1038/s41590-022-01327-7	CD3 <sup>-</sup> , CD14 <sup>-</sup> , CD19 <sup>-</sup> , CD7 <sup>+</sup> , NKG2C <sup>+</sup> or NKG2C <sup>-</sup> (combined 1:1)	Dataset 4a 3' V2	5	24,427	<b>GSE197037</b> GSM5907303 HCMV <sup>neg</sup> GSM5907304 HCMV <sup>neg</sup> GSM5907300 HCMV <sup>pos</sup> GSM5907301 HCMV <sup>pos</sup> GSM5907302 HCMV <sup>pos</sup>
		Dataset 4b 3' V3	2	14,991	<b>GSE197037</b> GSM5907305 HCMV <sup>pos</sup> GSM5907306 HCMV <sup>pos</sup>
<b>Dataset 5</b> Hao 2021, DOI: 10.1016/j.cell.2021.04.048	Based on ADT and authors annotations: CD3 <sup>-</sup> , CD14 <sup>-</sup> , CD19 <sup>-</sup> , CD45 <sup>+</sup> , CD56 <sup>+</sup>	3' and 5' V3 + 228 ADT	8	5,708	<b>GSE164378</b> GSM5008737 GSM5008738 GSM5008739 GSM5008740 GSM5008741 GSM5008742
<b>Dataset 6</b> Tang 2023, DOI: 10.1016/j.cell.2023.07.034	"In silico sorting": CD3E <sup>-</sup> CD3G <sup>-</sup> , CD3D <sup>-</sup> , KLRF1 <sup>+</sup> or NCAM1 <sup>+</sup>	3' and 5' V3 and V2	676	84,343 (blood) 34,756 (tumor)	<b>GSE212890</b>
<b>Dataset 7</b> Jaeger, under review	Tissue-dependent sorting	3' and 5' V3 and V2	19	48,621	<b>GSE240441</b>