**Supplementary Table 1: Antibodies**

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| Antibody | Catalog number | Catalog numberVendor |
| Alexa Fluor 700 Granzyme B | 372221 | BioLegend |
| FITC Perforin | 154309 | BioLegend |
| PE anti-mouse TNF-a | 506305 | BioLegend |
| APC FasL | 106609 | BioLegend |
| PE/Cvanine7 LAG-3 | 125225 | BioLegend |
| ABflo® 594 CD8a | A23905 | ABclonal |
| ABflo® 647 TIM-3 | A22779 | ABclonal |
| PE/Cyanine7 IFN-γ | 505825 | BioLegend |
| PE PD-1 | PE-65142 | Proteintech |
| Rabbit polyclonal anti-SLC4A8/10 antibody | TA315654 | OriGene |
| Sheep anti-rabbit IgG | A0208 | Beyotime |
| Brilliant Violet 421m Donkey anti-rabbit lgG | 406410 | BioLegend |