### Table S1 Reagents used for this study

#### Antibodies

| Name   | Company                  | Catalogue # |
|--------|--------------------------|-------------|
| CT45   | United States Biological | 34313       |
| NY-ESO-1 | Millipore Sigma       | N2038       |
| MAGE-A1 | AbCam                    | ab21472     |
| MAGE-A3 | AbCam                    | ab38496     |
| XAGE-1 | AbCam                    | ab13405     |
| SSX1   | AbCam                    | ab206839    |
| PRAME  | AbCam                    | ab219650    |
| BORIS  | AbCam                    | ab187163    |
| MHC Class I | AbCam             | ab134189    |
| b-Tubulin | AbCam                  | ab15568     |
| CD45   | BioLegend                | H300        |
| CD4    | BioLegend                | RPA-T4      |
| CD8    | BioLegend                | SK1         |
| CD25   | BioLegend                | BC96        |
| Foxp3  | BioLegend                | 26D         |
| CD14   | BioLegend                | HCD14       |
| CD16   | BioLegend                | 3G8         |
| PD-1   | BioLegend                | 29F         |
| CTLA-4 | BioLegend                | L3D10       |
| TIM-3  | BioLegend                | F38-2E2     |
| HLA-DR | BioLegend                | L243        |
| PD-L1  | BioLegend                | 29E.2A3     |

#### TaqMan primers and probes

| Name   | Company/sequence       | Catalogue # |
|--------|------------------------|-------------|
| MAGE-A1| Thermo Fisher          | Hs00607097_m1 |
| MAGE-A6| Thermo Fisher          | Hs00620508_m1 |
| MAGE-A12| Thermo Fisher         | Hs04176236_m1 |
| GAGE   | Thermo Fisher          | Hs00275620_m1 |
| XAGE-1 | Thermo Fisher          | Hs00220764_m1 |
| SSX1   | Thermo Fisher          | Hs00846992_s1 |
| SSX2   | Thermo Fisher          | Hs00817683_m1 |

#### CT45 F & R

5'-CTCTGGCCATGTCCAAGAGCAA-3'
5'-AAGTTGCAACTTCTGGAATTCCCAATTG-3'
6FAM-AAGGTTGACAGGACATGCTATTCCTGCAACC-3'
5'-TGCTTTGATTTCTCTTGGCAACCACATGACAT-3'
5'-GCTCTGCGGGGCAG-3'
6FAM-TTTCGGAGACCATGGAAGAAGCAG-3'
5'-TCTCTGGATCTTCTGACAAAGCATT-3'
5'-GGGGCCATTCCCCGATCCCT-3'
6FAM-CAGTCCTCATGCAGGCTTGGCTTGGCTG-3'
5'-CCCATTGTGACCACCATCA-3'
5'-AGCATGAAAGTGGCAGCAT-3'
6FAM-TGCAAGAAAAGGACCGTACCTGCTGAT-3'
5'-GGCAAGAAGTGAAGCAGCAGACATC-3'
5'-CCAGTTGTCACCGAGGAG-3'
6FAM-CCAGCCCATGTACCTGCTATCCAGACGGC-3'

#### Cell lines

| Name   | Company                  | Catalogue # |
|--------|--------------------------|-------------|
| H1299  | ATCC                     | CRL-5803    |
| H841   | ATCC                     | CRL-5845    |
| NHBE   | Lonza                    | CC-2541     |
| SAEC   | Lonza                    | CC-2547S    |
| K562-GM| Barry Kobrin, Johns Hopkins University |           |
Figure S1 Comparison of fold change from baseline of percent Tregs (A) and intensity of PD-1 expression on Tregs (B) between vaccine alone and vaccine with chemotherapy. The Mann-Whitney U test was used to compare the two groups.