**Table S1**. Public Datasets Used. Descriptive information and links to original sources for the public datasets used in the study.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **DataSet ID** | **Authors** | **Input Data** | **Cohort** | **Count** | **Outcome** | **Link** |
| TCGA | Various | Raw Integer Counts | Various | 10079 | Overall Survival | https://gdc.cancer.gov/ |
| GSE91061 | Riaz et al.,2017 | Raw .fastq Files | Melanoma | 109 | anti-PD1 Response | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE91061 |
| PRJEB23709 | Gide et al.,2019 | Raw .fastq Files | Melanoma | 91 | anti-PD1 or anti-PD1/CTLA4 Response | https://www.ebi.ac.uk/ena/data/view/ERX2263292 |
| GSE78220 | Hugo et al., 2016 | Raw .fastq Files | Melanoma | 28 | anti-PD1 Response | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE78220 |
| GSE35640 | Ulloa-Montoya et al.,  2013 | Raw .CEL Files | Melanoma | 65 | MAGE-A3 Immunotherapy Response | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE35640 |
| phs000452.v2.p1 | vanAllen et al., 2015 | Normalized Expression Matrix | Melanoma | 42 | anti-CTLA4 Response and Survival | http://tide.dfci.harvard.edu/login/ |
| GSE126044 | Kim et al., 2020 | Raw Integer Counts | Lung Cancer | 16 | anti-PD1 Response | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE126044> |
| GSE108474 | Gusev et al., 2018 | Raw .CEL Files | Glioma | 490 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE108474 |
| GSE84437 | Cheung et al., not yet pub | Normalized Expression Matrix | Gastric Cancer | 433 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE84437 |
| GSE32894 | Sjödahl et L., 2012 | Normalized Expression Matrix | Bladder Cancer | 224 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE32894 |
| GSE14520 | Roessler et al., 2012 | Raw .CEL Files | Hepatocelluler Cancer | 242 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE14520 |
| GSE17538 | Smith et al., 2010 | Raw .CEL Files | Colon Adenocarcinoma | 232 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE17538 |
| GSE65904 | Cirenajwis et al., 2015 | Normalized Expression Matrix | Melanoma | 210 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE65904 |
| GSE26712 | Bonome et al., 2008 | Raw .CEL Files | Ovarian Cancer | 185 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE26712 |
| GSE31210 | Yamauchi et al., 2012 | Raw .CEL Files | Lung Adenocarcinoma | 226 | Overall Survival | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE31210 |
| GSE39582 | Marisa et al., 2013 | Normalized Expression Matrix | Colon Adenocarcinoma | 579 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE39582> |
| GSE72094 | Schabath et al., 2016 | Normalized Expression Matrix | Lung Adenocarcinoma | 398 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE72094> |
| GSE9891 | Tothill et al., 2008 | Normalized Expression Matrix | Ovarian Cancer | 278 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE9891> |
| GSE30219 | Rousseaux et al., 2013 | Normalized Expression Matrix | Lung Cancer | 293 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE30219> |
| GSE65858 | Wichmann et al., 2015 | Normalized Expression Matrix | Head and Neck Cancer | 270 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE65858> |
| GSE13507 | Kim et al., 2010 | Normalized Expression Matrix | Bladder Cancer | 165 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE13507> |
| GSE3494 | Miller et al., 2005 | Normalized Expression Matrix | Breast Cancer | 251 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE3494> |
| GSE7390 | Desmedt et al., 2007 | Normalized Expression Matrix | Breast Cancer | 198 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE7390> |
| GSE13041 | Lee et al., 2009 | Normalized Expression Matrix | Glioma | 218 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE13041> |
| GSE24450 | Heikkinen et al., 2011 | Normalized Expression Matrix | Breast Cancer | 183 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE24450> |
| GSE1456 | Pawitan et al., 2005 | Normalized Expression Matrix | Breast Cancer | 159 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE1456> |
| GSE19188 | Hou et al., 2010 | Normalized Expression Matrix | Lung Cancer | 82 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE19188> |
| GSE3149 | Bild et al., 2006 | Normalized Expression Matrix | Ovarian Cancer | 141 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE3149> |
| GSE8894 | Lee et al., 2008 | Normalized Expression Matrix | Lung Cancer | 138 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE8894> |
| GSE14814 | Zhu et al., 2010 | Normalized Expression Matrix | Lung Cancer | 90 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=gse14814> |
| GSE4573 | Raponi et al., 2006 | Normalized Expression Matrix | Lung Cancer | 130 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE4573> |
| GSE16446 | Li et al., 2010 | Normalized Expression Matrix | Breast Cancer | 107 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE16446> |
| GSE3141 | Bild et al., 2006 | Normalized Expression Matrix | Lung Cancer | 111 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE3141> |
| GSE4271 | Phillips et al., 2006 | Normalized Expression Matrix | Glioma | 77 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE4271> |
| GSE20486 | Parris et al., 2010 | Normalized Expression Matrix | Breast Cancer | 97 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE20486> |
| GSE31056 | Reis et al., 2011 | Normalized Expression Matrix | Head and Neck cancer | 96 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE31056> |
| GSE24550 | Agesen et al., 2012 | Normalized Expression Matrix | Colon Adenocarcinoma | 77 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE24550> |
| GSE4412 | Freije et al., 2004 | Normalized Expression Matrix | Glioma | 85 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE4412> |
| GSE7696 | Murat et al., 2008 | Normalized Expression Matrix | Glioma | 80 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE8401> |
| GSE8401 | Xu et al., 2008 | Normalized Expression Matrix | Melanoma | 67 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE8401> |
| GSE24549 | Agesen et al., 2012 | Normalized Expression Matrix | Colon Adenocarcinoma | 83 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE24549> |
| GSE14764 | Denkert et al., 2009 | Normalized Expression Matrix | Ovarian Cancer | 80 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE14764> |
| GSE18521 | Mok et al., 2009 | Normalized Expression Matrix | Ovarian Cancer | 53 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE18521> |
| GSE16581 | Lee et al., 2010 | Normalized Expression Matrix | Meningioma | 67 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE16581> |
| GSE1993 | Petalidis et al., 2008 | Normalized Expression Matrix | Astrocytoma | 60 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE1993> |
| GSE10927 | Giordano et al., 2009 | Normalized Expression Matrix | Adrenocortical Carcinoma | 24 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE10927> |
| GSE12945 | Staub et al., 2009 | Normalized Expression Matrix | Colon Adenocarcinoma | 62 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE12945> |
| GSE10245 | Kuner et al., 2009 | Normalized Expression Matrix | Lung Cancer | 58 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE10245> |
| GSE22155 | Jönsson et al., 2010 | Normalized Expression Matrix | Colon Adenocarcinoma | 76 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE22155> |
| GSE29013 | Xie et al., 2011 | Normalized Expression Matrix | Lung Cancer | 55 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE29013> |
| GSE17618 | Savola et al., 2011 | Normalized Expression Matrix | Sarcoma | 44 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE17618> |
| GSE21257 | Buddingh et al., 2011 | Normalized Expression Matrix | Sarcoma | 53 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE21257> |
| GSE31547 | Girard et al., 2011 | Normalized Expression Matrix | Lung Cancer | 30 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE31547> |
| GSE22541 | Wuttig et al., 2012 | Normalized Expression Matrix | Colon Adenocarcinoma | 48 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE22541> |
| GSE19234 | Bogunovic et al., 2009 | Normalized Expression Matrix | Melanoma | 44 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE19234> |
| GSE3292 | Chung et al., 2006 | Normalized Expression Matrix | Head and Neck cancer | 32 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE3292> |
| GSE16091 | Paoloni et al., 2009 | Normalized Expression Matrix | Sarcoma | 34 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE16091> |
| GSE8167 | Yamaguchi et al., 2008 | Normalized Expression Matrix | Gastrointestinal Stromal Tumor | 32 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE8167> |
| GSE5287 | Als et al., 2007 | Normalized Expression Matrix | Bladder Cancer | 30 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE5287> |
| GSE19829 | Konstantinopoulos et al., 2010 | Normalized Expression Matrix | Ovarian Cancer | 28 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE19829> |
| GSE6253 | Lu et al., 2006 | Normalized Expression Matrix | Lung Cancer | 18 | Overall Survival | <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE6253> |