

## Supplement

**eTable 1.** Studies analyzed from the cBioPortal database.<sup>e1-e56</sup>

**eTable 2.** *NF1* fusion variants (N) located in sporadic cancers.

## eReferences

**eTable 1. cBioPortal Studies Analyzed**

Adrenocortical Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Glioblastoma Multiforme (TCGA, PanCancer Atlas) <sup>e3</sup>	Pancreatic Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>
Ampullary Carcinoma (Baylor College of Medicine, Cell Reports 2016) <sup>e4</sup>	Glioma (MSK, 2018) <sup>e22</sup>	Pancreatic Cancer (UTSW, Nat Commun 2015) <sup>e41</sup>
Basal Cell Carcinoma (UNIGE, Nat Genet 2016) <sup>e5</sup>	Head and Neck Squamous Cell Carcinoma (Broad, Science 2011) <sup>e23</sup>	Pediatric Preclinical Testing Consortium (Maris, 2019) <sup>e42</sup>
Bladder Cancer (MSKCC, Eur Urol 2014) <sup>e6</sup>	Head and Neck Squamous Cell Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Pheochromocytoma and Paraganglioma (TCGA, PanCancer Atlas) <sup>e3</sup>
Bladder Urothelial Carcinoma (BGI, Nat Genet 2013) <sup>e7</sup>	Hepatocellular Carcinomas (INSERM, Nat Genet 2015) <sup>e24</sup>	Primary Central Nervous System Lymphoma (Mayo Clinic, Clin Cancer Res 2015) <sup>e43</sup>
Bladder Urothelial Carcinoma (DFCI/MSKCC, Cancer Discov 2014) <sup>e8</sup>	Intrahepatic Cholangiocarcinoma (Shanghai, Nat Commun 2014) <sup>e25</sup>	Prostate Adenocarcinoma (MSKCC, Cancer Cell 2010) <sup>e44</sup>
Bladder Urothelial Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Kidney Renal Clear Cell Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Prostate Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>
Brain Lower Grade Glioma (TCGA, PanCancer Atlas) <sup>e3</sup>	Liver Hepatocellular Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Skin Cutaneous Melanoma (Broad, Cell 2012) <sup>e45</sup>
Breast Cancer (METABRIC, Nature 2012 & Nat Commun 2016) <sup>e9,e10</sup>	Lung Adenocarcinoma (Broad, Cell 2012) <sup>e26</sup>	Skin Cutaneous Melanoma (TCGA, PanCancer Atlas) <sup>e3</sup>
Breast Cancer (MSKCC, 2019) <sup>e11</sup>	Lung Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Skin Cutaneous Melanoma (Yale, Nat Genet 2012) <sup>e46</sup>
Breast Invasive Carcinoma (Sanger, Nature 2012) <sup>e12</sup>	Lung Adenocarcinoma (TSP, Nature 2008) <sup>e27</sup>	Skin Cutaneous Melanoma (Broad, Cancer Discov 2014) <sup>e47</sup>
Breast Invasive Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Lung Squamous Cell Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Small-Cell Lung Cancer (Multi-Institute, Cancer Cell 2017) <sup>e48</sup>
Cervical Squamous Cell Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Melanoma (MSKCC, NEJM 2014) <sup>e28</sup>	Small Cell Lung Cancer (Johns Hopkins, Nat Genet 2012) <sup>e49</sup>
Cholangiocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Metastatic Breast Cancer (INSERM, PLoS Med 2016) <sup>e29</sup>	Small Cell Lung Cancer (U Cologne, Nature 2015) <sup>e50</sup>
Clear Cell Renal Cell Carcinoma (DFCI, Science 2019) <sup>e13</sup>	Metastatic Melanoma (DFCI, Science 2015) <sup>e30</sup>	Stomach Adenocarcinoma (Pfizer and UHK, Nat Genet 2014) <sup>e51</sup>
Colorectal Adenocarcinoma (DFCI, Cell Reports 2016) <sup>e14</sup>	Metastatic Melanoma (MSKCC, JCO Precis Oncol 2017) <sup>e31</sup>	Stomach Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>
Colorectal Adenocarcinoma (Genentech, Nature 2012) <sup>e15</sup>	Metastatic Melanoma (UCLA, Cell 2016) <sup>e32</sup>	Stomach Adenocarcinoma (U Tokyo, Nat Genet 2014) <sup>e52</sup>
Colorectal Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Metastatic Prostate Adenocarcinoma (MCTP, Nature 2012) <sup>e33</sup>	SUMMIT-Neratinib Basket Study (Multi-Institute, Nature 2018) <sup>e53</sup>
Colorectal Adenocarcinoma Triplets (MSKCC, Genome Biol 2014) <sup>e16</sup>	Metastatic Prostate Adenocarcinoma (SU2C/PCF Dream Team, PNAS 2019) <sup>e34</sup>	The Metastatic Breast Cancer Project (Provisional, October 2018) <sup>e54</sup>
Cutaneous Squamous Cell Carcinoma (DFCI, Clin Cancer Res 2015) <sup>e17</sup>	Metastatic Solid Cancers (UMich, Nature 2017) <sup>e35</sup>	Thoracic PDX (MSK, Provisional)*
Cutaneous Squamous Cell Carcinoma (MD Anderson, Clin Cancer Res 2014) <sup>e18</sup>	MSS Mixed Solid Tumors (Broad/Dana-Farber, Nat Genet 2018) <sup>e36</sup>	Upper Tract Urothelial Cancer (MSK, Eur Urol 2015) <sup>e55</sup>
Desmoplastic Melanoma (Broad Institute, Nat Genet 2015) <sup>e19</sup>	Non-Small Cell Lung Cancer (MSK, Cancer Cell 2018) <sup>e37</sup>	Upper Tract Urothelial Carcinoma (Cornell/Baylor/MDACC, Nat Comm 2019) <sup>e56</sup>
Diffuse Large B-Cell Lymphoma (Duke, Cell 2017) <sup>e20</sup>	Non-Small Cell Lung Cancer (TRACERx, NEJM 2017) <sup>e38,e39</sup>	Uterine Corpus Endometrial Carcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>
Esophageal Adenocarcinoma (DFCI, Nat Genet 2013) <sup>e21</sup>	Ovarian Serous Cystadenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	
Esophageal Adenocarcinoma (TCGA, PanCancer Atlas) <sup>e3</sup>	Pancreatic Adenocarcinoma (QCMG, Nature 2016) <sup>e40</sup>	

\*no reference available

**eTable 2. Fusion alterations**

<b><u>NF1 Fusion Variants</u></b>					
<b>Variant</b>	<b>N</b>	<b>Variant</b>	<b>N</b>	<b>Variant</b>	<b>N</b>
<i>NF1-RAB11FIP4</i>	8	<i>NF1-EPHA1</i>	1	<i>NF1-AS1C2</i>	1
<i>NF1-SUZ12</i>	3	<i>GL1S3-NF1</i>	1	<i>NF1-ACACA</i>	1
<i>GOSR1-NF1</i>	2	<i>NF1-TSPAN18</i>	1	<i>NF1-NLE1</i>	1
<i>MYO18A-NF1</i>	2	<i>SH1SA9-NF1</i>	1	<i>NF1-IKZF3</i>	1
<i>NF1-RNF135</i>	2	<i>NF1-MAP2K4</i>	1	<i>NF1-CCR7</i>	1
<i>NF1-TAOK</i>	2	<i>CPD-NF1</i>	1	<i>STAT5B-NF1</i>	1
<i>BRCA1-NF1</i>	2	<i>MIR365-2-NF1</i>	1	<i>PLCD3-NF1</i>	1
<i>NF1-1p22.3</i>	1	<i>NF1-ATAD5</i>	1	<i>NF1-CDK5RAP3</i>	1
<i>KIF1B-NF1</i>	1	<i>NF1-POLDIP2</i>	1	<i>SP2-NF1</i>	1
<i>NF1-XPR</i>	1	<i>NF1-PSMD11</i>	1	<i>TTL6-NF1</i>	1
<i>NF1-YPEL5</i>	1	<i>NF1-RHOT1</i>	1	<i>NF1-CACNA1G</i>	1
<i>NF1-AGTR1</i>	1	<i>NF1-SLC46A1</i>	1	<i>NF1-CLTC</i>	1
<i>NF1-TPMT</i>	1	<i>NF1-SPACA3</i>	1	<i>NF1-BCAS3</i>	1
<i>NF1-6p24.1</i>	1	<i>NF1-SUZ12P1</i>	1	<i>PPMID-NF1</i>	1
<i>NF1-NRF1</i>	1	<i>NLK-NF1</i>	1	<i>PRKCA-NF1</i>	1
<i>TIMP2-NF1</i>	1	<i>NF1-RP11-353N14.5</i>	1	<i>NF1-19q13.2</i>	1
<i>NF1-RBX1</i>	1	<i>NF1-SH3BGRL</i>	1		

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