

S1-Table 1 search strategy

1 TS=lung cancer

2 TS=lung carcinoma

3 TS=lung neoplasms

4 TS=pulmonary neoplasm

5 TS=cancer of lung

6 #5 OR #4 OR #3 OR #2 OR #1

7 TS=PD1

8 TS=PD-1

9 TS=PD-L1

10 TS=anti-PD1

11 TS=anti-PD-1

12 TS=anti-PD-L1

13 TS=PD1/PD-L1

14 TS=PD-1/PD-L1

15 TS=anti-PD-1/PD-L1

16 TS=atezolizumab

17 TS=avelumab

18 TS=durvalumab

19 TS=nivolumab

20 TS=pembrolizumab

21 #20 OR #19 OR #18 OR #17 OR #16 OR #15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7

#21 AND #6

S2-Table 2 Top 100 cited articles

Rank	Publication	Cited Frequencies	Year	Average Cited Frequencies/Year
1	Safety, Activity, and Immune Correlates of Anti-PD-1 Antibody in Cancer	6248	2012	893
2	Safety and Activity of Anti-PD-L1 Antibody in Patients with Advanced Cancer	3990	2012	570
3	Nivolumab versus Docetaxel in Advanced Nonsquamous Non-Small-Cell Lung Cancer	3580	2015	895
4	Nivolumab versus Docetaxel in Advanced Squamous-Cell Non-Small-Cell Lung Cancer	3546	2015	887
5	Mutational landscape determines sensitivity to PD-1 blockade in non-small cell lung cancer	3016	2015	754
6	Pembrolizumab versus Chemotherapy for PD-L1-Positive Non-Small-Cell Lung Cancer	2660	2016	887
7	Tumor-associated B7-H1 promotes T-cell apoptosis: A potential mechanism of immune evasion	2541	2002	149
8	Pembrolizumab for the Treatment of Non-Small-Cell Lung Cancer	2497	2015	624
9	Pembrolizumab versus docetaxel for previously treated, PD-L1-positive, advanced non-small-cell lung cancer (KEYNOTE-010): a randomised controlled trial	2209	2016	736
10	Phase I Study of Single-Agent Anti-Programmed Death-1 (MDX-1106) in Refractory Solid Tumors: Safety, Clinical Activity, Pharmacodynamics, and Immunologic Correlates	1587	2010	176
11	Atezolizumab in patients with locally advanced and metastatic urothelial carcinoma who have progressed following treatment with platinum-based chemotherapy: a single-arm, multicentre, phase 2 trial	1374	2016	458
12	Atezolizumab versus docetaxel in patients with previously treated non-small-cell lung cancer (OAK): a phase 3, open-label, multicentre randomised controlled trial	1280	2017	640
13	Survival, Durable Tumor Remission, and Long-Term Safety in Patients With Advanced Melanoma Receiving Nivolumab	1265	2014	253
14	Mismatch repair deficiency predicts response of solid tumors to PD-1 blockade	1246	2017	623
15	Nivolumab for Recurrent Squamous-Cell Carcinoma of the Head and Neck	1198	2016	399
16	Association of PD-1, PD-1 Ligands, and Other Features of the Tumor Immune Microenvironment with Response to Anti-PD-1	1135	2014	227

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17	Atezolizumab versus docetaxel for patients with previously treated non-small-cell lung cancer (POPLAR): a multicentre, open-label, phase 2 randomised controlled trial	1074	2016	358
18	Immune Checkpoint Blockade in Cancer Therapy	1001	2015	250
19	Clonal neoantigens elicit T cell immunoreactivity and sensitivity to immune checkpoint blockade	934	2016	311
20	Inhibitory B7-family molecules in the tumour microenvironment	875	2008	80
21	Pembrolizumab plus Chemotherapy in Metastatic Non-Small-Cell Lung Cancer	828	2018	828
22	Durvalumab after Chemoradiotherapy in Stage III Non-Small-Cell Lung Cancer	801	2017	401
23	Activity and safety of nivolumab, an anti-PD-1 immune checkpoint inhibitor, for patients with advanced, refractory squamous non-small-cell lung cancer (CheckMate 063): a phase 2, single-arm trial	781	2015	195
24	Nivolumab in patients with advanced hepatocellular carcinoma (CheckMate 040): an open-label, non-comparative, phase 1/2 dose escalation and expansion trial	765	2017	383
25	Elements of cancer immunity and the cancer-immune set point	728	2017	364
26	Mechanism-driven biomarkers to guide immune checkpoint blockade in cancer therapy	713	2016	238
27	Gut microbiome influences efficacy of PD-1-based immunotherapy against epithelial tumors	683	2018	683
28	First-Line Nivolumab in Stage IV or Recurrent Non-Small-Cell Lung Cancer	670	2017	335
29	Nivolumab plus Ipilimumab in Lung Cancer with a High Tumor Mutational Burden	654	2018	654
30	PD-L1 (B7-H1) and PD-1 pathway blockade for cancer therapy: Mechanisms, response biomarkers, and combinations	628	2016	209
31	PD-L1 Expression as a Predictive Biomarker in Cancer Immunotherapy	617	2015	154
32	Immune-related adverse events with immune checkpoint blockade: a comprehensive review	613	2016	204
33	Carboplatin and pemetrexed with or without pembrolizumab for advanced, non-squamous non-small-cell lung cancer: a randomised, phase 2 cohort of the open-label KEYNOTE-021 study	606	2016	202
34	Activation of the PD-1 Pathway Contributes to Immune Escape in EGFR-Driven Lung Tumors	583	2013	97
35	Overall Survival and Long-Term Safety of Nivolumab (Anti-Programmed Death 1 Antibody, BMS-936558, ONO-4538) in Patients With Previously Treated Advanced Non-Small-Cell Lung Cancer	502	2015	126
36	B7-h1 expression on non-small cell lung cancer cells and its relationship with tumor-infiltrating lymphocytes and their PD-1 expression	492	2004	33

38	Atezolizumab for First-Line Treatment of Metastatic Nonsquamous NSCLC	477	2018	477
37	Programmed death ligand-1 expression in non-small cell lung cancer	477	2014	95
39	PD-L1 Immunohistochemistry Assays for Lung Cancer: Results from Phase 1 of the Blueprint PD-L1 IHC Assay Comparison Project	472	2017	236
40	Toxicities of the anti-PD-1 and anti-PD-L1 immune checkpoint antibodies	469	2015	117
41	Nivolumab alone and nivolumab plus ipilimumab in recurrent small-cell lung cancer (CheckMate 032): a multicentre, open-label, phase 1/2 trial	438	2016	146
42	CTLA-4 and PD-1 Pathways Similarities, Differences, and Implications of Their Inhibition	436	2016	145
43	Immunological Effects of Conventional Chemotherapy and Targeted Anticancer Agents	433	2015	108
44	Inhibiting DNA Methylation Causes an Interferon Response in Cancer via dsRNA Including Endogenous Retroviruses	432	2015	108
45	Adaptive resistance to therapeutic PD-1 blockade is associated with upregulation of alternative immune checkpoints	414	2016	138
46	IFN-gamma-related mRNA profile predicts clinical response to PD-1 blockade	404	2017	202
47	Non-Small Cell Lung Cancer, Version 5.2017 Clinical Practice Guidelines in Oncology	398	2017	199
48	Nivolumab plus ipilimumab as first-line treatment for advanced non-small-cell lung cancer (CheckMate 012): results of an open-label, phase 1, multicohort study	377	2017	189
49	Safety and Efficacy of Durvalumab (MEDI4736), an Anti-Programmed Cell Death Ligand-1 Immune Checkpoint Inhibitor, in Patients With Advanced Urothelial Bladder Cancer	374	2016	125
50	The B7-H1 (PD-L1) T lymphocyte-inhibitory molecule is expressed in breast cancer patients with infiltrating ductal carcinoma: Correlation with important high-risk prognostic factors	371	2006	29
51	Management of toxicities from immunotherapy: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up	366	2017	183
52	Tumor Mutational Burden as an Independent Predictor of Response to Immunotherapy in Diverse Cancers	366	2017	183
53	Pembrolizumab for patients with melanoma or non-small-cell lung cancer and untreated brain metastases: early analysis of a non-randomised, open-label, phase 2 trial	364	2016	121
54	iRECIST: guidelines for response criteria for use in trials testing immunotherapeutics	357	2017	179
55	High expression of PD-L1 in lung cancer may contribute to poor prognosis and tumor cells immune escape through suppressing tumor infiltrating dendritic cells maturation	352	2011	44
56	Quantitative Assessment of the Heterogeneity of PD-L1 Expression in Non-Small-Cell Lung Cancer	348	2016	116

57	EGFR Mutations and ALK Rearrangements Are Associated with Low Response Rates to PD-1 Pathway Blockade in Non-Small Cell Lung Cancer: A Retrospective Analysis	329	2016	110
58	Hyperprogressive Disease Is a New Pattern of Progression in Cancer Patients Treated by Anti-PD-1/PD-L1	326	2017	163
59	Metastasis is regulated via microRNA-200/ZEB1 axis control of tumour cell PD-L1 expression and intratumoral immunosuppression	325	2014	65
60	Pembrolizumab plus Chemotherapy for Squamous Non-Small-Cell Lung Cancer	322	2018	322
61	Association of PD-L1 overexpression with activating EGFR mutations in surgically resected nonsmall- cell lung cancer	318	2014	64
62	Antagonist Antibodies to PD-1 and B7-H1 (PD-L1) in the Treatment of Advanced Human Cancer	315	2013	53
63	PD-1 expression by tumour-associated macrophages inhibits phagocytosis and tumour immunity	314	2017	157
64	Management of toxicities of immune checkpoint inhibitors	305	2016	102
66	PD-1 and PD-L1 expression in molecularly selected non-small-cell lung cancer patients	303	2015	76
65	Intratumoral CD4(+)CD25(+) regulatory T-cell-mediated suppression of infiltrating CD4(+) T cells in B-cell non-Hodgkin lymphoma	303	2006	23
67	Safety and antitumour activity of durvalumab plus tremelimumab in non-small-cell lung cancer: a multicentre, phase 1b study	299	2016	100
68	T-Cell Transfer Therapy Targeting Mutant KRAS in Cancer	295	2016	98
69	Management of immune checkpoint blockade dysimmune toxicities: a collaborative position paper	288	2016	96
70	Managing toxicities associated with immune checkpoint inhibitors: consensus recommendations from the Society for Immunotherapy of Cancer (SITC) Toxicity Management Working Group	282	2017	141
71	PD-1 and PD-L1 Checkpoint Signaling Inhibition for Cancer Immunotherapy: Mechanism, Combinations, and Clinical Outcome	277	2017	139
72	Molecular Pathways: Next-Generation Immunotherapy-Inhibiting Programmed Death-Ligand 1 and Programmed Death-1	274	2012	39
73	Immune Checkpoint Inhibition for Hypermutant Glioblastoma Multiforme Resulting From Germline Biallelic Mismatch Repair Deficiency	273	2016	91
74	Nivolumab monotherapy in recurrent metastatic urothelial carcinoma (CheckMate 032): a multicentre, open-label, two-stage, multi-arm, phase 1/2 trial	270	2016	90
75	A Prospective, Multi-institutional, Pathologist-Based Assessment of 4 Immunohistochemistry Assays for PD-L1 Expression in Non-Small Cell Lung Cancer	269	2017	135
76	Overall Survival with Durvalumab after Chemoradiotherapy in Stage III NSCLC	267	2018	267
77	Immunogenic Chemotherapy Sensitizes Tumors to Checkpoint Blockade Therapy	263	2016	88

78	Checkpoint Inhibitors in Metastatic EGFR-Mutated Non-Small Cell Lung Cancer A Meta-Analysis	259	2017	130
79	In Situ Tumor PD-L1 mRNA Expression Is Associated with Increased TILs and Better Outcome in Breast Carcinomas	254	2014	51
80	Differential Activity of Nivolumab, Pembrolizumab and MPDL3280A according to the Tumor Expression of Programmed Death-Ligand-1 (PD-L1): Sensitivity Analysis of Trials in Melanoma, Lung and Genitourinary Cancers	252	2015	63
81	Neoadjuvant PD-1 Blockade in Resectable Lung Cancer	249	2018	249
82	Tumor and Microenvironment Evolution during Immunotherapy with Nivolumab	241	2017	121
83	Pneumonitis in Patients Treated With Anti-Programmed Death-1/Programmed Death Ligand 1 Therapy	241	2017	121
84	Co-occurring Genomic Alterations Define Major Subsets of KRAS-Mutant Lung Adenocarcinoma with Distinct Biology, Immune Profiles, and Therapeutic Vulnerabilities	237	2015	59
85	PD-1 blockade inhibits hematogenous spread of poorly immunogenic tumor cells by enhanced recruitment of effector T cells	237	2005	17
86	The biology and management of non-small cell lung cancer	236	2018	236
87	Rescue of exhausted CD8 T cells by PD-1-targeted therapies is CD28-dependent	236	2017	118
88	Upregulation of PD-L1 by EGFR Activation Mediates the Immune Escape in EGFR-Driven NSCLC Implication for Optional Immune Targeted Therapy for NSCLC Patients with EGFR Mutation	235	2015	59
89	Comparative study of the PD-L1 status between surgically resected specimens and matched biopsies of NSCLC patients reveal major discordances: a potential issue for anti-PD-L1 therapeutic strategies	232	2016	77
90	Anti-PD-1 therapy in patients with advanced melanoma and preexisting autoimmune disorders or major toxicity with ipilimumab	231	2017	116
92	Molecular Determinants of Response to Anti-Programmed Cell Death (PD)-1 and Anti-Programmed Death-Ligand 1 (PD-L1) Blockade in Patients With Non-Small-Cell Lung Cancer Profiled With Targeted Next-Generation Sequencing	228	2018	228
91	The Next Immune-Checkpoint Inhibitors: PD-1/PD-L1 Blockade in Melanoma	228	2015	57
93	The immune contexture in cancer prognosis and treatment	226	2017	113
94	Microsatellite Instability as a Biomarker for PD-1 Blockade	225	2016	75
95	Previous radiotherapy and the clinical activity and toxicity of pembrolizumab in the treatment of non-small-cell lung cancer: a secondary analysis of the KEYNOTE-001 phase 1 trial	220	2017	110
97	Human cancer immunotherapy with antibodies to the PD-1 and PD-L1 pathway	220	2015	55
96	B7-H3 and B7-H4 expression in non-small-cell lung cancer	220	2006	17

98	Neurological, respiratory, musculoskeletal, cardiac and ocular side-effects of anti-PD-1 therapy	219	2016	73
99	Breathing new life into immunotherapy: review of melanoma, lung and kidney cancer	219	2014	44
100	Programmed Cell Death 1 (PD-1) and Its Ligand (PD-L1) in Common Cancers and Their Correlation with Molecular Cancer Type	218	2014	44
