

# Robert J Lefkowitz

## List of Publications by Year in descending order

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155  
papers

42,738  
citations

3334

91  
h-index

7950

149  
g-index

157  
all docs

157  
docs citations

157  
times ranked

21105  
citing authors

#	ARTICLE	IF	CITATIONS
1	Seven-transmembrane receptors. <i>Nature Reviews Molecular Cell Biology</i> , 2002, 3, 639-650.	37.0	2,357
2	Transduction of Receptor Signals by $\beta$ -Arrestins. <i>Science</i> , 2005, 308, 512-517.	12.6	1,570
3	Cloning of the gene and cDNA for mammalian $\beta^2$ -adrenergic receptor and homology with rhodopsin. <i>Nature</i> , 1986, 321, 75-79.	27.8	1,284
4	$\beta^2$ -Arrestins and Cell Signaling. <i>Annual Review of Physiology</i> , 2007, 69, 483-510.	13.1	1,277
5	Turning off the signal: desensitization of $\beta^2$ -adrenergic receptor function. <i>FASEB Journal</i> , 1990, 4, 2881-2889.	0.5	1,209
6	G PROTEIN-COUPLED RECEPTOR KINASES. <i>Annual Review of Biochemistry</i> , 1998, 67, 653-692.	11.1	1,194
7	Switching of the coupling of the $\beta^2$ -adrenergic receptor to different G proteins by protein kinase A. <i>Nature</i> , 1997, 390, 88-91.	27.8	1,176
8	Enhanced Morphine Analgesia in Mice Lacking $\beta^2$ -Arrestin 2. <i>Science</i> , 1999, 286, 2495-2498.	12.6	953
9	The role of $\beta^2$ -arrestins in the termination and transduction of G-protein-coupled receptor signals. <i>Journal of Cell Science</i> , 2002, 115, 455-465.	2.0	935
10	Seven-transmembrane-spanning receptors and heart function. <i>Nature</i> , 2002, 415, 206-212.	27.8	862
11	$\beta^4$ -Opioid receptor desensitization by $\beta^2$ -arrestin-2 determines morphine tolerance but not dependence. <i>Nature</i> , 2000, 408, 720-723.	27.8	834
12	The role of beta-arrestins in the termination and transduction of G-protein-coupled receptor signals. <i>Journal of Cell Science</i> , 2002, 115, 455-65.	2.0	780
13	Molecular mechanisms of receptor desensitization using the $\beta^2$ -adrenergic receptor-coupled adenylate cyclase system as a model. <i>Nature</i> , 1985, 317, 124-129.	27.8	758
14	beta -Arrestin 2: A Receptor-Regulated MAPK Scaffold for the Activation of JNK3. , 2000, 290, 1574-1577.		752
15	Teaching old receptors new tricks: biasing seven-transmembrane receptors. <i>Nature Reviews Drug Discovery</i> , 2010, 9, 373-386.	46.4	724
16	$\beta^2$ -Arrestin-dependent, G Protein-independent ERK1/2 Activation by the $\beta^2$ Adrenergic Receptor. <i>Journal of Biological Chemistry</i> , 2006, 281, 1261-1273.	3.4	651
17	$\beta^2$ -arrestin-mediated receptor trafficking and signal transduction. <i>Trends in Pharmacological Sciences</i> , 2011, 32, 521-533.	8.7	628
18	Independent $\beta$ -arrestin 2 and G protein-mediated pathways for angiotensin II activation of extracellular signal-regulated kinases 1 and 2. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 10782-10787.	7.1	620

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19	The genomic clone G-21 which resembles a $\beta^2$ -adrenergic receptor sequence encodes the 5-HT1A receptor. <i>Nature</i> , 1988, 335, 358-360.	27.8	611
20	The $\beta^2$ -adrenergic receptor interacts with the Na <sup>+</sup> /H <sup>+</sup> -exchanger regulatory factor to control Na <sup>+</sup> /H <sup>+</sup> exchange. <i>Nature</i> , 1998, 392, 626-630.	27.8	566
21	Receptor-tyrosine-kinase- and G $\beta\gamma$ -mediated MAP kinase activation by a common signalling pathway. <i>Nature</i> , 1995, 376, 781-784.	27.8	554
22	A unique mechanism of $\beta^2$ -blocker action: Carvedilol stimulates $\beta^2$ -arrestin signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 16657-16662.	7.1	545
23	Cross-talk between cellular signalling pathways suggested by phorbol-ester-induced adenylate cyclase phosphorylation. <i>Nature</i> , 1987, 327, 67-70.	27.8	538
24	Molecular Mechanism of $\beta^2$ -Arrestin-Biased Agonism at Seven-Transmembrane Receptors. <i>Annual Review of Pharmacology and Toxicology</i> , 2012, 52, 179-197.	9.4	536
25	Distinct Phosphorylation Sites on the $\beta^2$ -Adrenergic Receptor Establish a Barcode That Encodes Differential Functions of $\beta^2$ -Arrestin. <i>Science Signaling</i> , 2011, 4, ra51.	3.6	535
26	Biased signalling: from simple switches to allosteric microprocessors. <i>Nature Reviews Drug Discovery</i> , 2018, 17, 243-260.	46.4	524
27	An intronless gene encoding a potential member of the family of receptors coupled to guanine nucleotide regulatory proteins. <i>Nature</i> , 1987, 329, 75-79.	27.8	513
28	$\beta^2$ -arrestin- but not G protein-mediated signaling by the $\epsilon$ -receptor CXCR7. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 628-632.	7.1	499
29	Protein kinases that phosphorylate activated G protein-coupled receptors. <i>FASEB Journal</i> , 1995, 9, 175-182.	0.5	494
30	Activation of the cloned muscarinic potassium channel by G protein $\beta\gamma$ subunits. <i>Nature</i> , 1994, 370, 143-146.	27.8	484
31	Role of c-Src Tyrosine Kinase in G Protein-coupled Receptor and G $\beta\gamma$ Subunit-mediated Activation of Mitogen-activated Protein Kinases. <i>Journal of Biological Chemistry</i> , 1996, 271, 19443-19450.	3.4	483
32	Therapeutic potential of $\beta^2$ -arrestin- and G protein-biased agonists. <i>Trends in Molecular Medicine</i> , 2011, 17, 126-139.	6.7	469
33	Differential Kinetic and Spatial Patterns of $\beta^2$ -Arrestin and G Protein-mediated ERK Activation by the Angiotensin II Receptor. <i>Journal of Biological Chemistry</i> , 2004, 279, 35518-35525.	3.4	455
34	GPCR-G Protein- $\beta^2$ -Arrestin Super-Complex Mediates Sustained G Protein Signaling. <i>Cell</i> , 2016, 166, 907-919.	28.9	443
35	Removal of phosphorylation sites from the $\beta^2$ -adrenergic receptor delays onset of agonist-promoted desensitization. <i>Nature</i> , 1988, 333, 370-373.	27.8	439
36	Visualization of arrestin recruitment by a G-protein-coupled receptor. <i>Nature</i> , 2014, 512, 218-222.	27.8	433

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37	Physiological effects of inverse agonists in transgenic mice with myocardial overexpression of the $\beta_2$ -adrenoceptor. <i>Nature</i> , 1995, 374, 272-276.	27.8	431
38	Distinct $\beta$ -Arrestin- and G Protein-dependent Pathways for Parathyroid Hormone Receptor-stimulated ERK1/2 Activation. <i>Journal of Biological Chemistry</i> , 2006, 281, 10856-10864.	3.4	422
39	$\beta_2\beta_3$ Subunits Mediate Src-dependent Phosphorylation of the Epidermal Growth Factor Receptor. <i>Journal of Biological Chemistry</i> , 1997, 272, 4637-4644.	3.4	420
40	Classical and new roles of $\beta$ -arrestins in the regulation of G-PROTEIN-COUPLED receptors. <i>Nature Reviews Neuroscience</i> , 2001, 2, 727-733.	10.2	413
41	$\beta$ -Arrestin-mediated $\beta_1$ -adrenergic receptor transactivation of the EGFR confers cardioprotection. <i>Journal of Clinical Investigation</i> , 2007, 117, 2445-2458.	8.2	405
42	Distinct Pathways of Gi- and Gq-mediated Mitogen-activated Protein Kinase Activation. <i>Journal of Biological Chemistry</i> , 1995, 270, 17148-17153.	3.4	397
43	Structure of active $\beta$ -arrestin-1 bound to a G-protein-coupled receptor phosphopeptide. <i>Nature</i> , 2013, 497, 137-141.	27.8	393
44	Emerging paradigms of $\beta$ -arrestin-dependent seven transmembrane receptor signaling. <i>Trends in Biochemical Sciences</i> , 2011, 36, 457-469.	7.5	380
45	Historical review: A brief history and personal retrospective of seven-transmembrane receptors. <i>Trends in Pharmacological Sciences</i> , 2004, 25, 413-422.	8.7	363
46	Keeping G Proteins at Bay: A Complex Between G Protein-Coupled Receptor Kinase 2 and Gbetagamma. <i>Science</i> , 2003, 300, 1256-1262.	12.6	361
47	A stress response pathway regulates DNA damage through $\beta_2$ -adrenoreceptors and $\beta$ -arrestin-1. <i>Nature</i> , 2011, 477, 349-353.	27.8	360
48	$\beta$ -Arrestin Scaffolding of the ERK Cascade Enhances Cytosolic ERK Activity but Inhibits ERK-mediated Transcription following Angiotensin AT1a Receptor Stimulation. <i>Journal of Biological Chemistry</i> , 2002, 277, 9429-9436.	3.4	345
49	Quantifying Ligand Bias at Seven-Transmembrane Receptors. <i>Molecular Pharmacology</i> , 2011, 80, 367-377.	2.3	341
50	Functional antagonism of different G protein-coupled receptor kinases for $\beta$ -arrestin-mediated angiotensin II receptor signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 1442-1447.	7.1	318
51	The Stability of the G Protein-coupled Receptor- $\beta$ -Arrestin Interaction Determines the Mechanism and Functional Consequence of ERK Activation. <i>Journal of Biological Chemistry</i> , 2003, 278, 6258-6267.	3.4	316
52	Isoprenylation in regulation of signal transduction by G-protein-coupled receptor kinases. <i>Nature</i> , 1992, 359, 147-150.	27.8	310
53	Identification, Quantification, and Localization of mRNA for Three Distinct Alpha <sub>1</sub> Adrenergic Receptor Subtypes in Human Prostate. <i>Journal of Urology</i> , 1993, 150, 546-551.	0.4	310
54	Different G protein-coupled receptor kinases govern G protein and $\beta$ -arrestin-mediated signaling of V2 vasopressin receptor. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 1448-1453.	7.1	298

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55	Allosteric nanobodies reveal the dynamic range and diverse mechanisms of G-protein-coupled receptor activation. <i>Nature</i> , 2016, 535, 448-452.	27.8	290
56	Distinct conformations of GPCR $\beta$ -arrestin complexes mediate desensitization, signaling, and endocytosis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 2562-2567.	7.1	281
57	New Roles for $\beta$ -Arrestins in Cell Signaling: Not Just for Seven-Transmembrane Receptors. <i>Molecular Cell</i> , 2006, 24, 643-652.	9.7	273
58	$\beta$ -arrestins: traffic cops of cell signaling. <i>Current Opinion in Cell Biology</i> , 2004, 16, 162-168.	5.4	269
59	A region of adenylyl cyclase 2 critical for regulation by G protein beta gamma subunits. <i>Science</i> , 1995, 268, 1166-1169.	12.6	261
60	Recent developments in biased agonism. <i>Current Opinion in Cell Biology</i> , 2014, 27, 18-24.	5.4	247
61	Structure of the M2 muscarinic receptor $\beta$ -arrestin complex in a lipid nanodisc. <i>Nature</i> , 2020, 579, 297-302.	27.8	238
62	$\beta$ -Arrestin-biased Agonism at the $\beta$ 2-Adrenergic Receptor. <i>Journal of Biological Chemistry</i> , 2008, 283, 5669-5676.	3.4	226
63	A Brief History of G $\beta$ -Protein Coupled Receptors (Nobel Lecture). <i>Angewandte Chemie - International Edition</i> , 2013, 52, 6366-6378.	13.8	222
64	Desensitization, internalization, and signaling functions of $\beta$ -arrestins demonstrated by RNA interference. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 1740-1744.	7.1	210
65	Light-dependent phosphorylation of rhodopsin by $\beta$ -adrenergic receptor kinase. <i>Nature</i> , 1986, 321, 869-872.	27.8	207
66	Identification of the G Protein-coupled Receptor Kinase Phosphorylation Sites in the Human $\beta$ 2-Adrenergic Receptor. <i>Journal of Biological Chemistry</i> , 1996, 271, 13796-13803.	3.4	205
67	Angiotensin Analogs with Divergent Bias Stabilize Distinct Receptor Conformations. <i>Cell</i> , 2019, 176, 468-478.e11.	28.9	194
68	Protein Kinase A-mediated Phosphorylation of the $\beta$ 2-Adrenergic Receptor Regulates Its Coupling to Gs and Gi. <i>Journal of Biological Chemistry</i> , 2002, 277, 31249-31256.	3.4	175
69	Manifold roles of $\beta$ -arrestins in GPCR signaling elucidated with siRNA and CRISPR/Cas9. <i>Science Signaling</i> , 2018, 11, .	3.6	169
70	Molecular mechanism of biased signaling in a prototypical G protein $\beta$ -coupled receptor. <i>Science</i> , 2020, 367, 881-887.	12.6	168
71	$\beta$ -Arrestin-2 regulates the development of allergic asthma. <i>Journal of Clinical Investigation</i> , 2003, 112, 566-574.	8.2	166
72	Dancing with Different Partners: Protein Kinase A Phosphorylation of Seven Membrane-Spanning Receptors Regulates Their G Protein-Coupling Specificity. <i>Molecular Pharmacology</i> , 2002, 62, 971-974.	2.3	162

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73	Reciprocal Regulation of Angiotensin Receptor-activated Extracellular Signal-regulated Kinases by $\hat{I}^2$ -Arrestins 1 and 2. <i>Journal of Biological Chemistry</i> , 2004, 279, 7807-7811.	3.4	157
74	Constitutive Protease-activated Receptor-2-mediated Migration of MDA MB-231 Breast Cancer Cells Requires Both $\hat{I}^2$ -Arrestin-1 and -2. <i>Journal of Biological Chemistry</i> , 2004, 279, 55419-55424.	3.4	155
75	Angiotensin and biased analogs induce structurally distinct active conformations within a GPCR. <i>Science</i> , 2020, 367, 888-892.	12.6	150
76	Mechanism of intracellular allosteric $\hat{I}^2$ AR antagonist revealed by X-ray crystal structure. <i>Nature</i> , 2017, 548, 480-484.	27.8	148
77	Conformational Basis of G Protein-Coupled Receptor Signaling Versatility. <i>Trends in Cell Biology</i> , 2020, 30, 736-747.	7.9	147
78	Distinctive Activation Mechanism for Angiotensin Receptor Revealed by a Synthetic Nanobody. <i>Cell</i> , 2019, 176, 479-490.e12.	28.9	143
79	Structure of an endosomal signaling GPCRâ€G proteinâ€ $\hat{I}^2$ -arrestin megacomplex. <i>Nature Structural and Molecular Biology</i> , 2019, 26, 1123-1131.	8.2	139
80	Activation-dependent Conformational Changes in $\hat{I}^2$ -Arrestin 2. <i>Journal of Biological Chemistry</i> , 2004, 279, 55744-55753.	3.4	135
81	Pharmacological Characterization of Membrane-Expressed Human Trace Amine-Associated Receptor 1 (TAAR1) by a Bioluminescence Resonance Energy Transfer cAMP Biosensor. <i>Molecular Pharmacology</i> , 2008, 74, 585-594.	2.3	135
82	Intracoronary Adenovirus-Mediated Delivery and Overexpression of the $\hat{I}^2$ $\alpha$ -Adrenergic Receptor in the Heart. <i>Circulation</i> , 2000, 101, 408-414.	1.6	133
83	Differential regulation of the $\hat{I}^2$ -adrenergic receptor by Na <sup>+</sup> and guanine nucleotides. <i>Nature</i> , 1980, 288, 709-711.	27.8	123
84	The Active Conformation of $\hat{I}^2$ -Arrestin1. <i>Journal of Biological Chemistry</i> , 2007, 282, 21370-21381.	3.4	121
85	Regulation of $\hat{I}^2$ -Adrenergic Receptor Function by Conformationally Selective Single-Domain Intrabodies. <i>Molecular Pharmacology</i> , 2014, 85, 472-481.	2.3	121
86	Allosteric $\beta$ -blockerâ€isolated from a DNA-encoded small molecule library. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 1708-1713.	7.1	118
87	Pure $\hat{I}^2$ -adrenergic receptor: the single polypeptide confers catecholamine responsiveness to adenylate cyclase. <i>Nature</i> , 1983, 306, 562-566.	27.8	117
88	A role for Ni in the hormonal stimulation of adenylate cyclase. <i>Nature</i> , 1985, 318, 293-295.	27.8	107
89	Divergent Transducer-specific Molecular Efficacies Generate Biased Agonism at a G Protein-coupled Receptor (GPCR). <i>Journal of Biological Chemistry</i> , 2014, 289, 14211-14224.	3.4	105
90	ACTHâ€RECEPTOR INTERACTION IN THE ADRENAL: A MODEL FOR THE INITIAL STEP IN THE ACTION OF HORMONES THAT STIMULATE ADENYL CYCLASE. <i>Annals of the New York Academy of Sciences</i> , 1971, 185, 195-209.	3.8	104

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91	Turned on to ill effect. <i>Nature</i> , 1993, 365, 603-604.	27.8	101
92	$\beta$ -Arrestin-2 regulates the development of allergic asthma. <i>Journal of Clinical Investigation</i> , 2003, 112, 566-574.	8.2	99
93	Chronic guanethidine treatment increases cardiac $\beta$ -adrenergic receptors. <i>Nature</i> , 1978, 273, 240-242.	27.8	89
94	Phosphorylation of $\beta$ -Arrestin2 Regulates Its Function in Internalization of $\beta$ -Adrenergic Receptors. <i>Biochemistry</i> , 2002, 41, 10692-10699.	2.5	87
95	Augmentation of Cardiac Contractility Mediated by the Human $\beta$ -Adrenergic Receptor Overexpressed in the Hearts of Transgenic Mice. <i>Circulation</i> , 2001, 104, 2485-2491.	1.6	85
96	$\beta$ -Arrestin-mediated Signaling Regulates Protein Synthesis. <i>Journal of Biological Chemistry</i> , 2008, 283, 10611-10620.	3.4	84
97	Mechanism of $\beta$ -AR regulation by an intracellular positive allosteric modulator. <i>Science</i> , 2019, 364, 1283-1287.	12.6	82
98	$\beta$ -Arrestin Deficiency Protects Against Pulmonary Fibrosis in Mice and Prevents Fibroblast Invasion of Extracellular Matrix. <i>Science Translational Medicine</i> , 2011, 3, 74ra23.	12.4	81
99	Stable Interaction between $\beta$ -Arrestin 2 and Angiotensin Type 1A Receptor Is Required for $\beta$ -Arrestin 2-mediated Activation of Extracellular Signal-regulated Kinases 1 and 2. <i>Journal of Biological Chemistry</i> , 2004, 279, 48255-48261.	3.4	76
100	Small-Molecule Positive Allosteric Modulators of the $\beta$ -Adrenoceptor Isolated from DNA-Encoded Libraries. <i>Molecular Pharmacology</i> , 2018, 94, 850-861.	2.3	66
101	Discovery of $\beta$ Adrenergic Receptor Ligands Using Biosensor Fragment Screening of Tagged Wild-Type Receptor. <i>ACS Medicinal Chemistry Letters</i> , 2013, 4, 1005-1010.	2.8	65
102	Conformationally selective RNA aptamers allosterically modulate the $\beta$ -adrenoceptor. <i>Nature Chemical Biology</i> , 2016, 12, 709-716.	8.0	65
103	$\beta$ -Arrestin2 Couples Metabotropic Glutamate Receptor 5 to Neuronal Protein Synthesis and Is a Potential Target to Treat Fragile X. <i>Cell Reports</i> , 2017, 18, 2807-2814.	6.4	60
104	Sortase ligation enables homogeneous GPCR phosphorylation to reveal diversity in $\beta$ -arrestin coupling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 3834-3839.	7.1	57
105	Allosteric Modulation of $\beta$ -Arrestin-biased Angiotensin II Type 1 Receptor Signaling by Membrane Stretch. <i>Journal of Biological Chemistry</i> , 2014, 289, 28271-28283.	3.4	55
106	Arrestins Come of Age. <i>Progress in Molecular Biology and Translational Science</i> , 2013, 118, 3-18.	1.7	50
107	Regulation of the $\beta$ -adrenergic receptor and its mRNA in the rat ventral prostate by testosterone. <i>FEBS Letters</i> , 1988, 233, 173-176.	2.8	49
108	Palmitoylation Increases the Kinase Activity of the G Protein-Coupled Receptor Kinase, GRK6. <i>Biochemistry</i> , 1998, 37, 16053-16059.	2.5	48

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109	G protein-coupled receptor kinases (GRKs) orchestrate biased agonism at the $\beta_2$ -adrenergic receptor. <i>Science Signaling</i> , 2018, 11, .	3.6	47
110	GPCR-mediated $\beta_2$ -arrestin activation deconvoluted with single-molecule precision. <i>Cell</i> , 2022, 185, 1661-1675.e16.	28.9	43
111	Introduction to Special Section on $\beta_2$ -Arrestins. <i>Annual Review of Physiology</i> , 2007, 69, .	13.1	42
112	$\beta$ -Actinin is a potent regulator of G protein-coupled receptor kinase activity and substrate specificity in vitro. <i>FEBS Letters</i> , 2000, 473, 280-284.	2.8	39
113	Detergent- and phospholipid-based reconstitution systems have differential effects on constitutive activity of G-protein-coupled receptors. <i>Journal of Biological Chemistry</i> , 2019, 294, 13218-13223.	3.4	38
114	$\beta_2$ -arrestin 1 regulates $\beta_2$ -adrenergic receptor-mediated skeletal muscle hypertrophy and contractility. <i>Skeletal Muscle</i> , 2018, 8, 39.	4.2	37
115	Molecular Mechanisms of Coupling in Hormone Receptor-Adenylate Cyclase Systems. <i>Advances in Enzymology and Related Areas of Molecular Biology</i> , 2006, 53, 1-43.	1.3	36
116	Myocardial G Protein-Coupled Receptor Kinases: Implications for Heart Failure Therapy. <i>Proceedings of the Association of American Physicians</i> , 1999, 111, 399-405.	2.0	35
117	Synthetic nanobodies as angiotensin receptor blockers. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 20284-20291.	7.1	35
118	SnapShot: $\beta_2$ -Arrestin Functions. <i>Cell</i> , 2020, 182, 1362-1362.e1.	28.9	35
119	Altered airway and cardiac responses in mice lacking G protein-coupled receptor kinase 3. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 1999, 276, R1214-R1221.	1.8	33
120	Temperature immutability of adenylyl cyclase-coupled $\beta_2$ adrenergic receptors. <i>Nature</i> , 1974, 249, 258-260.	27.8	31
121	Mechanisms involved in adrenergic receptor desensitization. <i>Biochemical Society Transactions</i> , 1990, 18, 541-544.	3.4	31
122	$\beta$ -Adrenoreceptors determine affinity but not intrinsic activity of adenylate cyclase stimulants. <i>Nature</i> , 1979, 280, 502-504.	27.8	25
123	$\beta_2$ -Arrestin-Biased Allosteric Modulator Potentiates Carvedilol-Stimulated $\beta_2$ Adrenergic Receptor Cardioprotection. <i>Molecular Pharmacology</i> , 2021, 100, 568-579.	2.3	24
124	Variations on a theme. <i>Nature</i> , 1991, 351, 353-354.	27.8	22
125	Receptor regulation: $\beta_2$ -arrestin moves up a notch. <i>Nature Cell Biology</i> , 2005, 7, 1159-1161.	10.3	22
126	Signaling at the endosome: cryo-EM structure of a GPCR-G protein-beta-arrestin megacomplex. <i>FEBS Journal</i> , 2021, 288, 2562-2569.	4.7	22



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127	Allosteric activation of proto-oncogene kinase Src by GPCR $\beta$ -arrestin complexes. <i>Journal of Biological Chemistry</i> , 2020, 295, 16773-16784.	3.4	21
128	GPCR signaling: conformational activation of arrestins. <i>Cell Research</i> , 2018, 28, 783-784.	12.0	20
129	Effect of pertussis toxin on $\beta$ -adrenoceptors: decreased formation of the high-affinity state for agonists. <i>FEBS Letters</i> , 1984, 172, 95-98.	2.8	19
130	The $\beta$ -arrestin-biased $\beta$ -adrenergic receptor blocker carvedilol enhances skeletal muscle contractility. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 12435-12443.	7.1	19
131	$\beta$ -Arrestin $\beta$ -Biased Angiotensin II Receptor Agonists for COVID-19. <i>Circulation</i> , 2020, 142, 318-320.	1.6	19
132	Unique Positive Cooperativity Between the $\beta$ -Arrestin $\beta$ -Biased $\beta$ -Blocker Carvedilol and a Small Molecule Positive Allosteric Modulator of the $\beta$ -2-Adrenergic Receptor. <i>Molecular Pharmacology</i> , 2021, 100, 513-525.	2.3	18
133	Comparison of specificity of agonist and antagonist radioligand binding to $\beta$ adrenergic receptors. <i>Nature</i> , 1977, 268, 453-454.	27.8	17
134	The role of $\beta$ -arrestin2-dependent signaling in thoracic aortic aneurysm formation in a murine model of Marfan syndrome. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2015, 309, H1516-H1527.	3.2	17
135	Cloning of the cDNA and Genes for the Hamster and Human $\beta$ -2-Adrenergic Receptors. <i>Journal of Receptors and Signal Transduction</i> , 1988, 8, 7-21.	1.2	13
136	Identification of the Subunit Structure of Rat Pineal Adrenergic Receptors by Photoaffinity Labeling. <i>Journal of Neurochemistry</i> , 1986, 46, 1153-1160.	3.9	12
137	Translating science to medicine: The case for physician-scientists. <i>Science Translational Medicine</i> , 2022, 14, eabg7852.	12.4	11
138	Eine kurze Geschichte der G-Protein $\beta$ -gekoppelten Rezeptoren (Nobel $\beta$ -Aufsatz). <i>Angewandte Chemie</i> , 2013, 125, 6494-6507.	2.0	9
139	Beta-adrenergic receptors: Regulatory role of agonists. <i>Journal of Supramolecular Structure</i> , 1978, 8, 501-510.	2.3	7
140	Title is missing!. <i>Die Makromolekulare Chemie</i> , 1981, 182, 1945-1950.	1.1	7
141	The GPCR $\beta$ -arrestin complex allosterically activates C-Raf by binding its amino terminus. <i>Journal of Biological Chemistry</i> , 2021, 297, 101369.	3.4	7
142	Dihydroergocryptine binding and $\beta$ -adrenoreceptors in smooth muscle. <i>Nature</i> , 1980, 283, 109-110.	27.8	6
143	Costimulation of Adenylyl Cyclase and Phospholipase C by a Mutant $\beta$ -1B-Adrenergic Receptor Transgene Promotes Malignant Transformation of Thyroid Follicular Cells. <i>Endocrinology</i> , 1997, 138, 369-378.	2.8	6
144	Summary of Wenner-Gren International Symposium Receptor-Receptor Interactions Among Heptaspanning Membrane Receptors: From Structure to Function. <i>Journal of Molecular Neuroscience</i> , 2005, 26, 293-294.	2.3	5

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145	Î²-Arrestin2 mediates progression of murine primary myelofibrosis. JCI Insight, 2017, 2, .	5.0	5
146	A Serendipitous Scientist. Annual Review of Pharmacology and Toxicology, 2018, 58, 17-32.	9.4	4
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