

Michael H Hecht

List of Publications by Year in descending order

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144
papers

17,006
citations

19608
61
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13727
129
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144
all docs

144
docs citations

144
times ranked

10195
citing authors

#	ARTICLE	IF	CITATIONS
1	First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole. <i>Astrophysical Journal Letters</i> , 2019, 875, L1.	3.0	2,264
2	Detection of Perchlorate and the Soluble Chemistry of Martian Soil at the Phoenix Lander Site. <i>Science</i> , 2009, 325, 64-67.	6.0	913
3	First M87 Event Horizon Telescope Results. VI. The Shadow and Mass of the Central Black Hole. <i>Astrophysical Journal Letters</i> , 2019, 875, L6.	3.0	897
4	First M87 Event Horizon Telescope Results. V. Physical Origin of the Asymmetric Ring. <i>Astrophysical Journal Letters</i> , 2019, 875, L5.	3.0	814
5	First M87 Event Horizon Telescope Results. IV. Imaging the Central Supermassive Black Hole. <i>Astrophysical Journal Letters</i> , 2019, 875, L4.	3.0	806
6	First M87 Event Horizon Telescope Results. II. Array and Instrumentation. <i>Astrophysical Journal Letters</i> , 2019, 875, L2.	3.0	618
7	First Sagittarius A* Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way. <i>Astrophysical Journal Letters</i> , 2022, 930, L12.	3.0	568
8	First M87 Event Horizon Telescope Results. III. Data Processing and Calibration. <i>Astrophysical Journal Letters</i> , 2019, 875, L3.	3.0	519
9	H ₂ O at the Phoenix Landing Site. <i>Science</i> , 2009, 325, 58-61.	6.0	500
10	Evidence for Calcium Carbonate at the Mars Phoenix Landing Site. <i>Science</i> , 2009, 325, 61-64.	6.0	300
11	First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon. <i>Astrophysical Journal Letters</i> , 2021, 910, L13.	3.0	297
12	Metastability of Liquid Water on Mars. <i>Icarus</i> , 2002, 156, 373-386.	1.1	271
13	Role of photocurrent in low-temperature photoemission studies of Schottky-barrier formation. <i>Physical Review B</i> , 1990, 41, 7918-7921.	1.1	249
14	De novo proteins from designed combinatorial libraries. <i>Protein Science</i> , 2004, 13, 1711-1723.	3.1	237
15	Mutations that Reduce Aggregation of the Alzheimer's A β 242 Peptide: an Unbiased Search for the Sequence Determinants of A β 2 Amyloidogenesis. <i>Journal of Molecular Biology</i> , 2002, 319, 1279-1290.	2.0	216
16	First M87 Event Horizon Telescope Results. VII. Polarization of the Ring. <i>Astrophysical Journal Letters</i> , 2021, 910, L12.	3.0	215
17	First Sagittarius A* Event Horizon Telescope Results. VI. Testing the Black Hole Metric. <i>Astrophysical Journal Letters</i> , 2022, 930, L17.	3.0	215
18	First Sagittarius A* Event Horizon Telescope Results. V. Testing Astrophysical Models of the Galactic Center Black Hole. <i>Astrophysical Journal Letters</i> , 2022, 930, L16.	3.0	187

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19	Mars Water-Ice Clouds and Precipitation. Science, 2009, 325, 68-70.	6.0	173
20	Ground ice at the Phoenix Landing Site: Stability state and origin. Journal of Geophysical Research, 2009, 114, .	3.3	167
21	Nature disfavors sequences of alternating polar and non-polar amino acids: implications for amyloidogenesis 1 Edited by F. E. Cohen. Journal of Molecular Biology, 2000, 296, 961-968.	2.0	163
22	Rationally designed mutations convert de novo amyloid-like fibrils into monomeric β -sheet proteins. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 2760-2765.	3.3	163
23	Generic hydrophobic residues are sufficient to promote aggregation of the Alzheimer's A β 42 peptide. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15824-15829.	3.3	163
24	First Sagittarius A* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole. Astrophysical Journal Letters, 2022, 930, L14.	3.0	163
25	Recombinant Proteins Can Be Isolated from E. coli Cells by Repeated Cycles of Freezing and Thawing. Nature Biotechnology, 1994, 12, 1357-1360.	9.4	162
26	A High-Throughput Screen for Compounds That Inhibit Aggregation of the Alzheimer's Peptide. ACS Chemical Biology, 2006, 1, 461-469.	1.6	158
27	An absorption feature in the spectrum of the pulsed hard X-ray flux from 4U0115 + 63. Nature, 1979, 282, 240-243.	13.7	150
28	First Sagittarius A* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration. Astrophysical Journal Letters, 2022, 930, L13.	3.0	142
29	First Sagittarius A* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass. Astrophysical Journal Letters, 2022, 930, L15.	3.0	137
30	Binary patterning of polar and nonpolar amino acids in the sequences and structures of native proteins. Protein Science, 1995, 4, 2032-2039.	3.1	123
31	Initial results from the thermal and electrical conductivity probe (TECP) on Phoenix. Journal of Geophysical Research, 2010, 115, .	3.3	117
32	Stabilization of λ repressor against thermal denaturation by site-directed Gly \rightarrow Ala changes in α -helix 3. Proteins: Structure, Function and Bioinformatics, 1986, 1, 43-46.	1.5	116
33	The four-helix bundle: what determines a fold?. FASEB Journal, 1995, 9, 1013-1022.	0.2	112
34	Hydrogen-terminated silicon substrates for low-temperature molecular beam epitaxy. Thin Solid Films, 1989, 183, 197-212.	0.8	111
35	The role of turns in the structure of an α -helical protein. Nature, 1993, 364, 355-358.	13.7	111
36	Sequence Determinants of Enhanced Amyloidogenicity of Alzheimer A β 42 Peptide Relative to A β 40. Journal of Biological Chemistry, 2005, 280, 35069-35076.	1.6	109

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37	Surface extended-x-ray-absorption-fine-structure study of oxygen interaction with Al(111) surfaces. Physical Review B, 1980, 22, 4052-4065.	1.1	107
38	Solution structure of a de novo protein from a designed combinatorial library. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 13270-13273.	3.3	107
39	De Novo Proteins from Combinatorial Libraries. Chemical Reviews, 2001, 101, 3191-3204.	23.0	106
40	Electric and magnetic signatures of dust devils from the 2000â€“2001 MATADOR desert tests. Journal of Geophysical Research, 2004, 109, .	3.3	104
41	The Icebreaker Life Mission to Mars: A Search for Biomolecular Evidence for Life. Astrobiology, 2013, 13, 334-353.	1.5	104
42	Template-Directed Assembly of a de Novo Designed Protein. Journal of the American Chemical Society, 2002, 124, 6846-6848.	6.6	103
43	Stably folded de novo proteins from a designed combinatorial library. Protein Science, 2003, 12, 92-102.	3.1	101
44	Photoemission and photonâ€“stimulated ion desorption studies of diamond(111): Hydrogen. Journal of Vacuum Science and Technology, 1982, 21, 364-367.	1.9	99
45	Protein Design: The Choice of de Novo Sequences. Journal of Biological Chemistry, 1997, 272, 2031-2034.	1.6	97
46	Soluble sulfate in the martian soil at the Phoenix landing site. Geophysical Research Letters, 2010, 37, .	1.5	96
47	De Novo Designed Proteins from a Library of Artificial Sequences Function in Escherichia Coli and Enable Cell Growth. PLoS ONE, 2011, 6, e15364.	1.1	96
48	Introduction to special section on the Phoenix Mission: Landing Site Characterization Experiments, Mission Overviews, and Expected Science. Journal of Geophysical Research, 2008, 113, .	3.3	95
49	Self-Assembling Nano-Architectures Created from a Protein Nano-Building Block Using an Intermolecularly Folded Dimeric <i>de Novo</i> Protein. Journal of the American Chemical Society, 2015, 137, 11285-11293.	6.6	94
50	De novo heme proteins from designed combinatorial libraries. Protein Science, 1997, 6, 2512-2524.	3.1	93
51	A Novel Inhibitor of Amyloid Î² (AÎ²) Peptide Aggregation. Journal of Biological Chemistry, 2012, 287, 38992-39000.	1.6	93
52	Peroxidase Activity in Heme Proteins Derived from a Designed Combinatorial Library. Journal of the American Chemical Society, 2000, 122, 7612-7613.	6.6	83
53	Direct spectroscopy of electron and hole scattering. Physical Review Letters, 1990, 64, 2679-2682.	2.9	82
54	Small Molecule Microarrays Enable the Discovery of Compounds That Bind the Alzheimerâ€™s AÎ² Peptide and Reduce its Cytotoxicity. Journal of the American Chemical Society, 2010, 132, 17015-17022.	6.6	80

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55	Water vapor diffusion in Mars subsurface environments. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	79
56	Enzyme-like proteins from an unselected library of designed amino acid sequences. <i>Protein Engineering, Design and Selection</i> , 2004, 17, 67-75.	1.0	77
57	A Protein Designed by Binary Patterning of Polar and Nonpolar Amino Acids Displays Native-like Properties. <i>Journal of the American Chemical Society</i> , 1997, 119, 5302-5306.	6.6	74
58	Nanografting De Novo Proteins onto Gold Surfaces. <i>Langmuir</i> , 2005, 21, 9103-9109.	1.6	72
59	Cofactor binding and enzymatic activity in an unevolved superfamily of <i>de novo</i> designed 4 α -helix bundle proteins. <i>Protein Science</i> , 2009, 18, 1388-1400.	3.1	71
60	Polarimetric Properties of Event Horizon Telescope Targets from ALMA. <i>Astrophysical Journal Letters</i> , 2021, 910, L14.	3.0	67
61	Cooperative Thermal Denaturation of Proteins Designed by Binary Patterning of Polar and Nonpolar Amino Acids. <i>Biochemistry</i> , 2000, 39, 4603-4607.	1.2	65
62	Event Horizon Telescope observations of the jet launching and collimation in Centaurus A. <i>Nature Astronomy</i> , 2021, 5, 1017-1028.	4.2	65
63	Ballistic α -electron α -emission microscopy investigation of Schottky barrier interface formation. <i>Applied Physics Letters</i> , 1989, 55, 780-782.	1.5	62
64	Thermal and Electrical Conductivity Probe (TECP) for Phoenix. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	61
65	Novel proteins: from fold to function. <i>Current Opinion in Chemical Biology</i> , 2011, 15, 421-426.	2.8	58
66	The MECA Wet Chemistry Laboratory on the 2007 Phoenix Mars Scout Lander. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	56
67	Mars Oxygen ISRU Experiment (MOXIE). <i>Space Science Reviews</i> , 2021, 217, 1.	3.7	56
68	Event Horizon Telescope imaging of the archetypal blazar 3C 279 at an extreme 20 microarcsecond resolution. <i>Astronomy and Astrophysics</i> , 2020, 640, A69.	2.1	54
69	Mutations Enhance the Aggregation Propensity of the Alzheimer α 's A β Peptide. <i>Journal of Molecular Biology</i> , 2008, 377, 565-574.	2.0	53
70	Report of the COSPAR mars special regions colloquium. <i>Advances in Space Research</i> , 2010, 46, 811-829.	1.2	53
71	Peroxidase activity of de novo heme proteins immobilized on electrodes. <i>Journal of Inorganic Biochemistry</i> , 2007, 101, 1820-1826.	1.5	52
72	Midpoint reduction potentials and heme binding stoichiometries of de novo proteins from designed combinatorial libraries. <i>Biophysical Chemistry</i> , 2003, 105, 231-239.	1.5	50

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73	Carbon Monoxide Binding by de Novo Heme Proteins Derived from Designed Combinatorial Libraries. Journal of the American Chemical Society, 2001, 123, 2109-2115.	6.6	48
74	Structure and dynamics of de novo proteins from a designed superfamily of 4 α -helix bundles. Protein Science, 2008, 17, 821-832.	3.1	48
75	In situ measurement of dust devil dynamics: Toward a strategy for Mars. Journal of Geophysical Research, 2003, 108, .	3.3	47
76	A de novo enzyme catalyzes a life-sustaining reaction in Escherichia coli. Nature Chemical Biology, 2018, 14, 253-255.	3.9	47
77	Increasing and decreasing protein stability: Effects of revertant substitutions on the thermal denaturation of phage λ repressor. Journal of Cellular Biochemistry, 1985, 29, 217-224.	1.2	46
78	Ballistic-hole spectroscopy of interfaces. Physical Review B, 1990, 42, 7663-7666.	1.1	46
79	H-Bonding Maintains the Active Site of Type 1 Copper Proteins: Site-Directed Mutagenesis of Asn38 in Plastocyanin. Biochemistry, 1999, 38, 3379-3385.	1.2	44
80	Probing hot-carrier transport and elastic scattering using ballistic-electron-emission microscopy. Physical Review B, 1992, 46, 12826-12829.	1.1	43
81	Millimeter Light Curves of Sagittarius A* Observed during the 2017 Event Horizon Telescope Campaign. Astrophysical Journal Letters, 2022, 930, L19.	3.0	43
82	Ballistic-carrier spectroscopy of the CoSi ₂ /Si interface. Physical Review B, 1991, 44, 6546-6549.	1.1	41
83	Ballistic-electron-emission microscopy of electron transport through AlAs/GaAs heterostructures. Physical Review B, 1993, 48, 18324-18327.	1.1	41
84	Detecting native-like properties in combinatorial libraries of de novo proteins. Folding & Design, 1997, 2, 89-92.	4.5	40
85	Sequence replacements in the central β -turn of plastocyanin. Protein Science, 1996, 5, 814-824.	3.1	35
86	Mars Surveyor Program '01 Mars Environmental Compatibility Assessment wet chemistry lab: A sensor array for chemical analysis of the Martian soil. Journal of Geophysical Research, 2003, 108, 13-1 - 13-12.	3.3	35
87	A protein constructed de novo enables cell growth by altering gene regulation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2400-2405.	3.3	35
88	Screening Combinatorial Libraries of de Novo Proteins by Hydrogen-Deuterium Exchange and Electrospray Mass Spectrometry. Journal of the American Chemical Society, 1999, 121, 9509-9513.	6.6	34
89	Directed evolution of the peroxidase activity of a de novo-designed protein. Protein Engineering, Design and Selection, 2012, 25, 445-452.	1.0	31
90	Domain-Swapped Dimeric Structure of a Stable and Functional De Novo Four-Helix Bundle Protein, WA20. Journal of Physical Chemistry B, 2012, 116, 6789-6797.	1.2	31

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91	The Holy Grail: A road map for unlocking the climate record stored within Mars's polar layered deposits. Planetary and Space Science, 2020, 184, 104841.	0.9	30
92	In situ recording of Mars soundscape. Nature, 2022, 605, 653-658.	13.7	30
93	Characterizing hot-carrier transport in silicon heterostructures with the use of ballistic-electron-emission microscopy. Physical Review B, 1993, 48, 5712-5715.	1.1	29
94	Energy dependence of 3d, 4d, 5d, and 4f photoionization partial cross sections. Physical Review B, 1979, 20, 4126-4132.	1.1	28
95	Time dependence of photovoltaic shifts in photoelectron spectroscopy of semiconductors. Physical Review B, 1991, 43, 12102-12105.	1.1	28
96	The oxidation-reduction potential of aqueous soil solutions at the Mars Phoenix landing site. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	28
97	De Novo Proteins with Life-Sustaining Functions Are Structurally Dynamic. Journal of Molecular Biology, 2016, 428, 399-411.	2.0	28
98	An intein-based genetic selection allows the construction of a high-quality library of binary patterned de novo protein sequences. Protein Engineering, Design and Selection, 2005, 18, 201-207.	1.0	25
99	Proteins from an Unevolved Library of de novo Designed Sequences Bind a Range of Small Molecules. ACS Synthetic Biology, 2012, 1, 130-138.	1.9	25
100	A perchlorate brine lubricated deformable bed facilitating flow of the north polar cap of Mars: Possible mechanism for water table recharging. Journal of Geophysical Research, 2010, 115, .	3.3	24
101	A de novo protein confers copper resistance in E. coli. Protein Science, 2016, 25, 1249-1259.	3.1	24
102	A Non-natural Protein Rescues Cells Deleted for a Key Enzyme in Central Metabolism. ACS Synthetic Biology, 2017, 6, 694-700.	1.9	23
103	Self-Assembling Supramolecular Nanostructures Constructed from de Novo Extender Protein Nanobuilding Blocks. ACS Synthetic Biology, 2018, 7, 1381-1394.	1.9	23
104	On the sublimation of ice particles on the surface of Mars; with applications to the 2007/8 Phoenix Scout mission. Icarus, 2006, 181, 375-387.	1.1	22
105	Introduction to the 4th Mars Polar Science and Exploration Conference special issue: Five top questions in Mars polar science. Icarus, 2008, 196, 305-317.	1.1	22
106	Thermodynamic model of Mars Oxygen ISRU Experiment (MOXIE). Acta Astronautica, 2016, 129, 82-87.	1.7	22
107	Divergent evolution of a bifunctional de novo protein. Protein Science, 2015, 24, 246-252.	3.1	21
108	Selective Dynamical Imaging of Interferometric Data. Astrophysical Journal Letters, 2022, 930, L18.	3.0	21

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109	Electrochemical and ligand binding studies of a de novo heme protein. Biophysical Chemistry, 2006, 123, 102-112.	1.5	20
110	Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI. Astrophysical Journal Letters, 2022, 930, L21.	3.0	20
111	A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows. Astrophysical Journal Letters, 2022, 930, L20.	3.0	20
112	The energy dependence of photoelectron peak intensities, Part I: Experimental methods. Journal of Electron Spectroscopy and Related Phenomena, 1985, 35, 211-237.	0.8	18
113	Structure-Activity Relationships for a Series of Compounds that Inhibit Aggregation of the Alzheimer's Peptide, A β 42. Chemical Biology and Drug Design, 2014, 84, 505-512.	1.5	18
114	The Beagle 2 environmental sensors: science goals and instrument description. Planetary and Space Science, 2004, 52, 1141-1156.	0.9	16
115	The Lambda and P22 Phage Repressors. Journal of Biomolecular Structure and Dynamics, 1983, 1, 1011-1022.	2.0	15
116	Are natural proteins special? Can we do that?. Current Opinion in Structural Biology, 2018, 48, 124-132.	2.6	15
117	Intrinsic surface binding energy shifts in Yb metal. Journal of Electron Spectroscopy and Related Phenomena, 1984, 34, 343-353.	0.8	14
118	Mars atmospheric oxidant sensor (MAOS): an in-situ heterogeneous chemistry analysis. Planetary and Space Science, 2003, 51, 167-175.	0.9	14
119	Combinatorial Approaches to Probe the Sequence Determinants of Protein Aggregation and Amyloidogenicity. Protein and Peptide Letters, 2006, 13, 279-286.	0.4	14
120	The Mars Oxygen ISRU Experiment (MOXIE) on the Mars 2020 Rover. , 2015, , .		14
121	A Strategy for Combinatorial Cavity Design in De Novo Proteins. Life, 2020, 10, 9.	1.1	14
122	Artificial Gene Amplification in Escherichia coli Reveals Numerous Determinants for Resistance to Metal Toxicity. Journal of Molecular Evolution, 2018, 86, 103-110.	0.8	13
123	Oxidation of silicon with a 5 eV O ⁺ beam. Applied Physics Letters, 1989, 54, 421-423.	1.5	10
124	Hyperstable De Novo Protein with a Dimeric Bisecting Topology. ACS Synthetic Biology, 2020, 9, 254-259.	1.9	10
125	Binding of small molecules to cavity forming mutants of a de novo designed protein. Protein Science, 2011, 20, 702-711.	3.1	9
126	Introduction to the fifth Mars Polar Science special issue: Key questions, needed observations, and recommended investigations. Icarus, 2013, 225, 864-868.	1.1	9

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127	A Completely <i>De Novo</i> ATPase from Combinatorial Protein Design. Journal of the American Chemical Society, 2020, 142, 15230-15234.	6.6	9
128	Transient liquid water near an artificial heat source on Mars. Mars the International Journal of Mars Science and Exploration, 2006, 2, 83-96.	0.8	9
129	Unevolved De Novo Proteins Have Innate Tendencies to Bind Transition Metals. Life, 2019, 9, 8.	1.1	8
130	Design of a Fe ₄ S ₄ cluster into the core of a <i>de novo</i> four-helix bundle. Biotechnology and Applied Biochemistry, 2020, 67, 574-585.	1.4	6
131	Fabrication of collimating grids for an x-ray solar telescope using LIGA methods. Microsystem Technologies, 1997, 3, 91-96.	1.2	5
132	¹ H, ¹³ C and ¹⁵ N resonance assignments of S-824, a de novo four-helix bundle from a designed combinatorial library. Journal of Biomolecular NMR, 2003, 27, 395-396.	1.6	5
133	The energy-dependence of the Au 4f photoionization cross-section. Journal of Electron Spectroscopy and Related Phenomena, 1980, 18, 271-274.	0.8	4
134	The texture of condensed CO ₂ on the martian polar caps. Planetary and Space Science, 2008, 56, 246-250.	0.9	4
135	Harnessing synthetic biology to enhance heterologous protein expression. Protein Science, 2020, 29, 1698-1706.	3.1	4
136	Determination of Geochemistry on Mars Using an Array of Electrochemical Sensors. ACS Symposium Series, 2002, , 306-319.	0.5	3
137	Wall angle measurement with a scanning probe microscope employing a one-dimensional force sensor. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1997, 15, 2189.	1.6	2
138	NMR assignment of S836: a de novo protein from a designed superfamily. Biomolecular NMR Assignments, 2007, 1, 213-215.	0.4	2
139	Engineering Polymers for Triboelectricity Experiments on the Surface of Mars. Surface Science Spectra, 2002, 9, 206-226.	0.3	1
140	Remote Nanoimaging on Mars - Results of the Atomic Force Microscope Onboard NASA's Phoenix Mission. Microscopy and Microanalysis, 2011, 17, 864-865.	0.2	1
141	Stability of Protein Structure during Nanocarrier Encapsulation: Insights on Solvent Effects from Simulations and Spectroscopic Analysis. ACS Nano, 2020, 14, 16962-16972.	7.3	1
142	Identifying the Determinants of Protein Function and Stability. , 1987, , 177-198.		0
143	De Novo Protein Provides Life-sustaining Enzymatic Function in Auxotrophic E. coli. FASEB Journal, 2015, 29, 720.3.	0.2	0
144	Probing the Mechanism by which Proteins Designed <i>De Novo</i> Function in Living Cells. FASEB Journal, 2015, 29, 891.9.	0.2	0