Kevin E Healy

List of Publications by Year
in descending order

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137 papers	12,076 citations	23567 58 h-index	27406 106 g-index
146 all docs	146 docs citations	146 times ranked	13885 citing authors

#	Article	IF	Citations
1	Substrate Modulus Directs Neural Stem Cell Behavior. Biophysical Journal, 2008, 95, 4426-4438.	0.5	947
2	Engineering gene expression and protein synthesis by modulation of nuclear shape. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 1972-1977.	7.1	454
3	Human iPSC-based Cardiac Microphysiological System For Drug Screening Applications. Scientific Reports, 2015, 5, 8883.	3.3	411
4	Synthesis and Characterization of Injectable Poly(N-isopropylacrylamide)-Based Hydrogels That Support Tissue Formation in Vitro. Macromolecules, 1999, 32, 7370-7379.	4.8	335
5	Biomimetic Peptide Surfaces That Regulate Adhesion, Spreading, Cytoskeletal Organization, and Mineralization of the Matrix Deposited by Osteoblast-like Cells. Biotechnology Progress, 1999, 15, 19-32.	2.6	311
6	Synthesis and Characterization of Injectable Poly(N-isopropylacrylamide-co-acrylic acid) Hydrogels with Proteolytically Degradable Cross-Links. Biomacromolecules, 2003, 4, 1214-1223.	5.4	306
7	Theoretical Impact of the Injection of Material Into the Myocardium. Circulation, 2006, 114, 2627-2635.	1.6	279
8	Thermo-Responsive Peptide-Modified Hydrogels for Tissue Regeneration. Biomacromolecules, 2001, 2, 185-194.	5.4	245
9	Kinetics of bone cell organization and mineralization on materials with patterned surface chemistry. Biomaterials, 1996, 17, 195-208.	11.4	244
10	Hydration and preferential molecular adsorption on titanium in vitro. Biomaterials, 1992, 13, 553-561.	11.4	243
11	Automated Video-Based Analysis of Contractility and Calcium Flux in Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes Cultured over Different Spatial Scales. Tissue Engineering - Part C: Methods, 2015, 21, 467-479.	2.1	232
12	Specific Amelogenin Gene Splice Products Have Signaling Effects on Cells in Culture and in Implants in Vivo. Journal of Biological Chemistry, 2000, 275, 41263-41272.	3.4	222
13	Designing synthetic materials to control stem cell phenotype. Current Opinion in Chemical Biology, 2007, 11, 381-387.	6.1	208
14	Miniaturized iPS-Cell-Derived Cardiac Muscles for Physiologically Relevant Drug Response Analyses. Scientific Reports, 2016, 6, 24726.	3.3	191
15	The mechanisms of passive dissolution of titanium in a model physiological environment. Journal of Biomedical Materials Research Part B, 1992, 26, 319-338.	3.1	188
16	A biodegradable polymer scaffold for delivery of osteotropic factors. Biomaterials, 2000, 21, 2545-2551.	11.4	183
17	The detachment strength and morphology of bone cells contacting materials modified with a peptide sequence found within bone sialoprotein. , 1997, 37, 9-19.		170
18	Self-organizing human cardiac microchambers mediated by geometric confinement. Nature Communications, 2015, 6, 7413.	12.8	167

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19	Application of 3D Printing for Smart Objects with Embedded Electronic Sensors and Systems. Advanced Materials Technologies, 2016, 1, 1600013.	5.8	167
20	Bioactivation of Metal Oxide Surfaces. 1. Surface Characterization and Cell Response. Langmuir, 1999, 15, 6931-6939.	3.5	164
21	The effect of peptide surface density on mineralization of a matrix deposited by osteogenic cells. Journal of Biomedical Materials Research Part B, 2000, 52, 595-600.	3.1	164
22	Designing Biomaterials to Direct Biological Responses. Annals of the New York Academy of Sciences, 1999, 875, 24-35.	3.8	159
23	Directing cell migration and organization via nanocrater-patterned cell-repellent interfaces. Nature Materials, 2015, 14, 918-923.	27.5	159
24	Micropatterns of Chemisorbed Cell Adhesion-Repellent Films Using Oxygen Plasma Etching and Elastomeric Masks. Langmuir, 2003, 19, 4754-4764.	3.5	153
25	In vitro cardiac tissue models: Current status and future prospects. Advanced Drug Delivery Reviews, 2016, 96, 203-213.	13.7	150
26	The role of vitronectin in the attachment and spatial distribution of bone-derived cells on materials with patterned surface chemistry. Journal of Biomedical Materials Research Part B, 1997, 37, 81-93.	3.1	149
27	Tissue engineering strategies for promoting vascularized bone regeneration. Bone, 2016, 83, 197-209.	2.9	145
28	A versatile technique for patterning biomolecules onto glass coverslips. Journal of Neuroscience Methods, 1993, 50, 385-397.	2.5	141
29	Hydrogels as artificial matrices for human embryonic stem cell self-renewal. Journal of Biomedical Materials Research - Part A, 2006, 79A, 1-5.	4.0	141
30	Protein adsorption and cell attachment to patterned surfaces. Journal of Biomedical Materials Research Part B, 2000, 49, 200-210.	3.1	140
31	Integrin subunits responsible for adhesion of human osteoblast-like cells to biomimetic peptide surfaces. Journal of Orthopaedic Research, 1999, 17, 615-623.	2.3	138
32	The effect of plasma-sprayed calcium phosphate ceramic coatings on the metal ion release from porous titanium and cobalt-chromium alloys. Journal of Biomedical Materials Research Part B, 1988, 22, 1137-1163.	3.1	129
33	Synthetic MMP-13 degradable ECMs based on poly(N-isopropylacrylamide-co-acrylic acid) semi-interpenetrating polymer networks. I. Degradation and cell migration. Journal of Biomedical Materials Research - Part A, 2005, 75A, 73-88.	4.0	121
34	Generation of spatial-patterned early-developing cardiac organoids using human pluripotent stem cells. Nature Protocols, 2018, 13, 723-737.	12.0	121
35	Physiologically relevant organs on chips. Biotechnology Journal, 2014, 9, 16-27.	3.5	109
36	The effect of micronscale anisotropic cross patterns on fibroblast migration. Biomaterials, 2010, 31, 4286-4295.	11.4	106

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37	Calcium Transients Closely Reflect Prolonged Action Potentials in iPSC Models of Inherited Cardiac Arrhythmia. Stem Cell Reports, 2014, 3, 269-281.	4.8	106
38	Engineered polymer-media interfaces for the long-term self-renewal of human embryonic stem cells. Biomaterials, 2011, 32, 6912-6919.	11.4	104
39	The effect of ligand type and density on osteoblast adhesion, proliferation, and matrix mineralization. Journal of Biomedical Materials Research - Part A, 2005, 75A, 855-869.	4.0	103
40	Characterization of integrin engagement during defined human embryonic stem cell culture. FASEB Journal, 2010, 24, 1056-1065.	0.5	102
41	Three-dimensional filamentous human diseased cardiac tissue model. Biomaterials, 2014, 35, 1367-1377.	11.4	102
42	Spatial distribution of mammalian cells dictated by material surface chemistry. Biotechnology and Bioengineering, 1994, 43, 792-800.	3.3	101
43	Biomimetic interfacial interpenetrating polymer networks control neural stem cell behavior. Journal of Biomedical Materials Research - Part A, 2007, 81A, 240-249.	4.0	97
44	Multivalent ligands control stem cell behaviour in vitro and in vivo. Nature Nanotechnology, 2013, 8, 831-838.	31.5	97
45	Enhanced survival and engraftment of transplanted stem cells using growth factor sequestering hydrogels. Biomaterials, 2015, 47, 1-12.	11.4	97
46	Engineering Biomaterials for Synthetic Neural Stem Cell Microenvironments. Chemical Reviews, 2008, 108, 1787-1796.	47.7	95
47	Î¼Organo: A LegoÂ®-Like Plug & Play System for Modular Multi-Organ-Chips. PLoS ONE, 2015, 10, e0139587.	2.5	94
48	WAT-on-a-chip: a physiologically relevant microfluidic system incorporating white adipose tissue. Lab on A Chip, 2017, 17, 1645-1654.	6.0	93
49	Peptide-modified p(AAm-co-EG/AAc) IPNs grafted to bulk titanium modulate osteoblast behaviorin vitro. Journal of Biomedical Materials Research Part B, 2003, 64A, 38-47.	3.1	92
50	Poly(N-isopropylacrylamide)-Based Semi-interpenetrating Polymer Networks for Tissue Engineering Applications. 1. Effects of Linear Poly(acrylic acid) Chains on Phase Behavior. Biomacromolecules, 2002, 3, 591-600.	5.4	91
51	Neural stem cell adhesion and proliferation on phospholipid bilayers functionalized with RGD peptides. Biomaterials, 2010, 31, 8706-8715.	11.4	89
52	Contractile deficits in engineered cardiac microtissues as a result of MYBPC3 deficiency and mechanical overload. Nature Biomedical Engineering, 2018, 2, 955-967.	22.5	82
53	Biomimetic matrices for myocardial stabilization and stem cell transplantation. Journal of Biomedical Materials Research - Part A, 2010, 95A, 1055-1066.	4.0	76
54	Surface Creasing Instability of Soft Polyacrylamide Cell Culture Substrates. Biophysical Journal, 2010, 99, L94-L96.	0.5	72

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55	Characterization of Matrigel interfaces during defined human embryonic stem cell culture. Biointerphases, 2009, 4, 69-79.	1.6	71
56	Actomyosin-Mediated Tension Orchestrates Uncoupled Respiration in Adipose Tissues. Cell Metabolism, 2018, 27, 602-615.e4.	16.2	70
57	Molecular engineering of materials for bioreactivity. Current Opinion in Solid State and Materials Science, 1999, 4, 381-387.	11.5	67
58	The role of Î±3Î²1 integrin in determining the supramolecular organization of laminin-5 in the extracellular matrix of keratinocytes. Experimental Cell Research, 2003, 283, 67-79.	2.6	66
59	Molecular weight and concentration of heparin in hyaluronic acid-based matrices modulates growth factor retention kinetics and stem cell fate. Journal of Controlled Release, 2015, 209, 308-316.	9.9	65
60	Biomimetic artificial ECMs stimulate bone regeneration. Journal of Biomedical Materials Research - Part A, 2006, 79A, 815-826.	4.0	63
61	Matrix metalloproteinase-13 mediated degradation of hyaluronic acid-based matrices orchestrates stem cell engraftment through vascular integration. Biomaterials, 2016, 89, 136-147.	11.4	60
62	Drug-eluting biodegradable ureteral stent: New approach for urothelial tumors of upper urinary tract cancer. International Journal of Pharmaceutics, 2016, 513, 227-237.	5.2	58
63	Biophysics and dynamics of natural and engineered stem cell microenvironments. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 49-64.	6.6	55
64	Controlling biological interfaces on the nanometer length scale. Journal of Biomedical Materials Research - Part A, 2009, 90A, 1252-1261.	4.0	54
65	Intramyocardial injection of a fully synthetic hydrogel attenuates left ventricular remodeling post myocardial infarction. Biomaterials, 2019, 217, 119289.	11.4	54
66	Nanoparticulate DNA Packaging Using Terpolymers of Poly(lysine-g-(lactide-b-ethylene glycol)). Bioconjugate Chemistry, 2003, 14, 311-319.	3.6	53
67	The effect of multivalent Sonic hedgehog on differentiation of human embryonic stem cells into dopaminergic and GABAergic neurons. Biomaterials, 2014, 35, 941-948.	11.4	52
68	Multivalency of Sonic Hedgehog Conjugated to Linear Polymer Chains Modulates Protein Potency. Bioconjugate Chemistry, 2008, 19, 806-812.	3.6	50
69	Analysis of sterilization protocols for peptide-modified hydrogels. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2005, 74B, 440-447.	3.4	49
70	Mechanical and swelling characterization of poly(N-isopropyl acrylamide -co- methoxy poly(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	8.3	49
71	Patterning, Prestress, and Peeling Dynamics of Myocytes. Biophysical Journal, 2004, 86, 1209-1222.	0.5	48
72	Human induced pluripotent stem cell-based microphysiological tissue models of myocardium and liver for drug development. Stem Cell Research and Therapy, 2013, 4, S14.	5.5	48

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73	Matrix-Assisted Transplantation of Functional Beige Adipose Tissue. Diabetes, 2015, 64, 3713-3724.	0.6	47
74	Inhibition of macrophage development and foreign body giant cell formation by hydrophilic interpenetrating polymer network. Journal of Biomedical Materials Research Part B, 2004, 69A, 644-650.	3.1	46
75	Peri-implant bone formation and implant integration strength of peptide-modified p(AAM-co-EG/AAC) interpenetrating polymer network-coated titanium implants. Journal of Biomedical Materials Research - Part A, 2007, 80A, 306-320.	4.0	46
76	Chemical Patterning of Ultrathin Polymer Films by Direct-Write Multiphoton Lithography. Journal of the American Chemical Society, 2011, 133, 6138-6141.	13.7	46
77	Temporal Gene Expression Profiling during Rat Femoral Marrow Ablation-Induced Intramembranous Bone Regeneration. PLoS ONE, 2010, 5, e12987.	2.5	45
78	A probabilistic approach to measure the strength of bone cell adhesion to chemically modified surfaces. Annals of Biomedical Engineering, 1997, 25, 190-203.	2.5	44
79	Sequential robust design methodology and X-ray photoelectron spectroscopy to analyze the grafting of hyaluronic acid to glass substrates. Journal of Biomedical Materials Research Part B, 2002, 61, 391-398.	3.1	42
80	Bioelectrocatalytic self-assembled thylakoids for micro-power and sensing applications. Sensors and Actuators B: Chemical, 2006, 117, 480-487.	7.8	42
81	Metabolically driven maturation of human-induced-pluripotent-stem-cell-derived cardiac microtissues on microfluidic chips. Nature Biomedical Engineering, 2022, 6, 372-388.	22.5	42
82	Immobilized sonic hedgehog N-terminal signaling domain enhances differentiation of bone marrow-derived mesenchymal stem cells. Journal of Biomedical Materials Research - Part A, 2007, 83A, 1200-1208.	4.0	41
83	Inversion and computational maturation of drug response using human stem cell derived cardiomyocytes in microphysiological systems. Scientific Reports, 2018, 8, 17626.	3.3	41
84	A combined hiPSC-derived endothelial cell and in vitro microfluidic platform for assessing biomaterial-based angiogenesis. Biomaterials, 2019, 194, 73-83.	11.4	41
85	Regulation of endothelial cell function by GRGDSP peptide grafted on interpenetrating polymers. Journal of Biomedical Materials Research - Part A, 2007, 83A, 423-433.	4.0	40
86	Gellan Gum Hydrogels with Enzymeâ€Sensitive Biodegradation and Endothelial Cell Biorecognition Sites. Advanced Healthcare Materials, 2018, 7, 1700686.	7.6	39
87	Improved Computational Identification of Drug Response Using Optical Measurements of Human Stem Cell Derived Cardiomyocytes in Microphysiological Systems. Frontiers in Pharmacology, 2019, 10, 1648.	3.5	39
88	In vitro characterization of peptide-modified p(AAm-co-EG/AAc) IPN-coated titanium implants. Journal of Orthopaedic Research, 2006, 24, 1366-1376.	2.3	37
89	Exploiting bacterial peptide display technology to engineer biomaterials for neural stem cell culture. Biomaterials, 2011, 32, 1484-1494.	11.4	37
90	Controlling Osteogenic Stem Cell Differentiation via Soft Bioinspired Hydrogels. PLoS ONE, 2014, 9, e98640.	2.5	35

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91	Ligand density characterization of peptide-modified biomaterials. Biomaterials, 2005, 26, 6897-6905.	11.4	33
92	Poly(N-isopropylacrylamide)-based semi-interpenetrating polymer networks for tissue engineering applications. Effects of linear poly(acrylic acid) chains on rheology. Journal of Biomaterials Science, Polymer Edition, 2004, 15, 865-878.	3.5	32
93	A system to impose prescribed homogenous strains on cultured cells. Journal of Applied Physiology, 2001, 91, 1600-1610.	2.5	31
94	TGF-Î²1/CD105 signaling controls vascular network formation within growth factor sequestering hyaluronic acid hydrogels. PLoS ONE, 2018, 13, e0194679.	2.5	29
95	Integrated Isogenic Human Induced Pluripotent Stem Cellâ€“Based Liver and Heart Microphysiological Systems Predict Unsafe Drugâ€“Drug Interaction. Frontiers in Pharmacology, 2021, 12, 667010.	3.5	29
96	Why regenerative medicine needs an extracellular matrix. Expert Opinion on Biological Therapy, 2015, 15, 3-7.	3.1	27
97	Surface chemistry control of monocyte and macrophage adhesion, morphology, and fusion. , 2000, 49, 141-145.		25
98	Multivalent hyaluronic acid bioconjugates improve sFlt-1 activity inÂvitro. Biomaterials, 2016, 93, 95-105.	11.4	25
99	Semisynthetic Hyaluronic Acid-Based Hydrogel Promotes Recovery of the Injured Tibialis Anterior Skeletal Muscle Form and Function. ACS Biomaterials Science and Engineering, 2021, 7, 1587-1599.	5.2	25
100	Multivalent conjugates of basic fibroblast growth factor enhance in vitro proliferation and migration of endothelial cells. Biomaterials Science, 2018, 6, 1076-1083.	5.4	24
101	New Molecular Scaffolds for Fluorescent Voltage Indicators. ACS Chemical Biology, 2019, 14, 390-396.	3.4	23
102	The effect of enzymatically degradable IPN coatings on peri-implant bone formation and implant fixation. Journal of Biomedical Materials Research - Part A, 2007, 81A, 720-727.	4.0	22
103	Isochoric supercooled preservation and revival of human cardiac microtissues. Communications Biology, 2021, 4, 1118.	4.4	21
104	Molecular Characterization of Multivalent Bioconjugates by Size-Exclusion Chromatography with Multiangle Laser Light Scattering. Bioconjugate Chemistry, 2012, 23, 1794-1801.	3.6	20
105	Hyaluronic Acid Macromer Molecular Weight Dictates the Biophysical Properties and in Vitro Cellular Response to Semisynthetic Hydrogels. ACS Biomaterials Science and Engineering, 2020, 6, 1135-1143.	5.2	20
106	Engineering the Emergence of Stem Cell Therapeutics. Science Translational Medicine, 2013, 5, 207ed17.	12.4	19
107	Low Fouling Electrospun Scaffolds with Clicked Bioactive Peptides for Specific Cell Attachment. Biomacromolecules, 2015, 16, 2109-2118.	5.4	18
108	Matrix-assisted cell transplantation for tissue vascularization. Advanced Drug Delivery Reviews, 2019, 146, 155-169.	13.7	18

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109	Osteogenic Cell Attachment to Degradable Polymers. Materials Research Society Symposia Proceedings, 1991, 252, 109.	0.1	16
110	Myocardial injection of a thermoresponsive hydrogel with reactive oxygen species scavenger properties improves border zone contractility. Journal of Biomedical Materials Research - Part A, 2020, 108, 1736-1746.	4.0	16
111	Scleral Reinforcement Through Host Tissue Integration with Biomimetic Enzymatically Degradable Semi-Interpenetrating Polymer Network. Tissue Engineering - Part A, 2010, 16, 905-916.	3.1	15
112	A Bioengineering Approach to Myopia Control Tested in a Guinea Pig Model. , 2017, 58, 1875.		15
113	A traceless linker for aliphatic amines that rapidly and quantitatively fragments after reduction. Chemical Science, 2020, 11, 8973-8980.	7.4	15
114	Multivalent Conjugates of Sonic Hedgehog Accelerate Diabetic Wound Healing. Tissue Engineering - Part A, 2015, 21, 2366-2378.	3.1	14
115	Axisymmetric Adhesion Test To Examine the Interfacial Interactions between Biologically-Modified Networks and Models of the Extracellular Matrixâ€. Langmuir, 2003, 19, 1853-1860.	3.5	13
116	Controlling integrin-based adhesion to a degradable electrospun fibre scaffold via SI-ATRP. Journal of Materials Chemistry B, 2016, 4, 7314-7322.	5.8	12
117	Facile Macrocyclic Polyphenol Barrier Coatings for PDMS Microfluidic Devices. Advanced Functional Materials, 2020, 30, 2001274.	14.9	12
118	Maladaptive Contractility of 3D Human Cardiac Microtissues to Mechanical Nonuniformity. Advanced Healthcare Materials, 2020, 9, e1901373.	7.6	12
119	Heart Muscle Microphysiological System for Cardiac Liability Prediction of Repurposed COVID-19 Therapeutics. Frontiers in Pharmacology, 2021, 12, 684252.	3.5	12
120	Stem cell-based vascularization of microphysiological systems. Stem Cell Reports, 2021, 16, 2058-2075.	4.8	12
121	Effect of avidin-like proteins and biotin modification on mesenchymal stem cell adhesion. Biomaterials, 2013, 34, 3758-3762.	11.4	11
122	Identifying Drug Response by Combining Measurements of the Membrane Potential, the Cytosolic Calcium Concentration, and the Extracellular Potential in Microphysiological Systems. Frontiers in Pharmacology, 2020, 11, 569489.	3.5	11
123	In vitro safety â€œclinical trialâ€•of the cardiac liability of drug polytherapy. Clinical and Translational Science, 2021, 14, 1155-1165.	3.1	11
124	sFlt Multivalent Conjugates Inhibit Angiogenesis and Improve Half-Life In Vivo. PLoS ONE, 2016, 11, e0155990.	2.5	9
125	Navigating the Future of Cardiovascular Drug Developmentâ€"Leveraging Novel Approaches to Drive Innovation and Drug Discovery: Summary of Findings from the Novel Cardiovascular Therapeutics Conference. Cardiovascular Drugs and Therapy, 2017, 31, 445-458.	2.6	8
126	Branching Analysis of Multivalent Conjugates Using Size Exclusion Chromatographyâ€"Multiangle Light Scattering. Biomacromolecules, 2016, 17, 3162-3171.	5.4	7

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127	Quantitatively characterizing drugâ€induced arrhythmic contractile motions of human stem cellâ€derived cardiomyocytes. Biotechnology and Bioengineering, 2018, 115, 1958-1970.	3.3	5
128	Protein adsorption and cell attachment to patterned surfaces. Journal of Biomedical Materials Research Part B, 2000, 49, 200-210.	3.1	5
129	Cells nourished by nanodrops. Nature Materials, 2009, 8, 700-702.	27.5	4
130	High-Throughput Discovery of Targeted, Minimally Complex Peptide Surfaces for Human Pluripotent Stem Cell Culture. ACS Biomaterials Science and Engineering, 2021, 7, 1344-1360.	5.2	4
131	Biomimetic and Bio-responsive Materials in Regenerative Medicine. , 2009, , 1-58.		4
132	Designing Tunable Artificial Matrices for Stem Cell Culture. , 2011, , 717-728.		2
133	Cardiac Microtissues: Maladaptive Contractility of 3D Human Cardiac Microtissues to Mechanical Nonuniformity (Adv. Healthcare Mater. 8/2020). Advanced Healthcare Materials, 2020, 9, 2070024.	7.6	1
134	The role of vitronectin in the attachment and spatial distribution of bone-derived cells on materials with patterned surface chemistry. , 1997, 37, 81.		1
135	Designing Tunable Artificial Matrices for Stem Cell Culture. , 2013, , 927-935.		0
136	Stem Cells and Regenerative Medicine for Treating Damaged Myocardium. , 2012, , 1-24.		0
137	Quantitatively Characterizing Drug-Induced Arrhythmic Contractile Motions of Human Stem Cell-Derived Cardiomyocytes. Biotechnology and Bioengineering, 0, , .	3.3	0