

Cheng-Ming Chuong

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127
papers

6,115
citations

47
h-index

76
g-index

133
ext. papers

6,969
ext. citations

8.8
avg, IF

5.61
L-index

#	Paper	IF	Citations
127	Cyclic dermal BMP signalling regulates stem cell activation during hair regeneration. <i>Nature</i> , 2008 , 451, 340-4	50.4	507
126	Local inhibitory action of BMPs and their relationships with activators in feather formation: implications for periodic patterning. <i>Developmental Biology</i> , 1998 , 196, 11-23	3.1	305
125	Molecular shaping of the beak. <i>Science</i> , 2004 , 305, 1465-6	33.3	202
124	An integrative approach to understanding bird origins. <i>Science</i> , 2014 , 346, 1253-293	33.3	178
123	The morphogenesis of feathers. <i>Nature</i> , 2002 , 420, 308-12	50.4	178
122	Evo-Devo of amniote integuments and appendages.. <i>International Journal of Developmental Biology</i> , 2004 , 48, 249-270	1.9	151
121	Developmental biology. The Turing model comes of molecular age. <i>Science</i> , 2006 , 314, 1397-8	33.3	143
120	Adhesion molecules in skeletogenesis: II. Neural cell adhesion molecules mediate precartilaginous mesenchymal condensations and enhance chondrogenesis. <i>Journal of Cellular Physiology</i> , 1993 , 156, 399-411	7	137
119	beta-catenin in epithelial morphogenesis: conversion of part of avian foot scales into feather buds with a mutated beta-catenin. <i>Developmental Biology</i> , 2000 , 219, 98-114	3.1	133
118	Competitive balance of intrabulge BMP/Wnt signaling reveals a robust gene network ruling stem cell homeostasis and cyclic activation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 1351-6	11.5	122
117	Sonic Hedgehog in feather morphogenesis: induction of mesenchymal condensation and association with cell death. <i>Developmental Dynamics</i> , 1996 , 207, 157-70	2.9	118
116	The biology of feather follicles.. <i>International Journal of Developmental Biology</i> , 2004 , 48, 181-191	1.9	117
115	Evo-devo of feathers and scales: building complex epithelial appendages. <i>Current Opinion in Genetics and Development</i> , 2000 , 10, 449-56	4.9	113
114	Morpho-regulation of ectodermal organs: integument pathology and phenotypic variations in K14-Noggin engineered mice through modulation of bone morphogenic protein pathway. <i>American Journal of Pathology</i> , 2004 , 164, 1099-114	5.8	109
113	The making of a feather: homeoproteins, retinoids and adhesion molecules. <i>BioEssays</i> , 1993 , 15, 513-21	4.1	107
112	Mapping stem cell activities in the feather follicle. <i>Nature</i> , 2005 , 438, 1026-9	50.4	104
111	Early events during avian skin appendage regeneration: dependence on epithelial-mesenchymal interaction and order of molecular reappearance. <i>Journal of Investigative Dermatology</i> , 1996 , 107, 639-46	4.3	104

110	Synergistic coactivator function by coactivator-associated arginine methyltransferase (CARM) 1 and beta-catenin with two different classes of DNA-binding transcriptional activators. <i>Journal of Biological Chemistry</i> , 2002 , 277, 26031-5	5.4	103
109	Reptile scale paradigm: Evo-Devo, pattern formation and regeneration. <i>International Journal of Developmental Biology</i> , 2009 , 53, 813-26	1.9	101
108	Local circadian clock gates cell cycle progression of transient amplifying cells during regenerative hair cycling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E2106-15	11.5	99
107	Integument pattern formation involves genetic and epigenetic controls: feather arrays simulated by digital hormone models.. <i>International Journal of Developmental Biology</i> , 2004 , 48, 117-135	1.9	97
106	Distinct Wnt members regulate the hierarchical morphogenesis of skin regions (spinal tract) and individual feathers. <i>Mechanisms of Development</i> , 2004 , 121, 157-71	1.7	87
105	Mechanism of skin morphogenesis. I. Analyses with antibodies to adhesion molecules tenascin, N-CAM, and integrin. <i>Developmental Biology</i> , 1992 , 150, 82-98	3.1	86
104	Specialized stem cell niche enables repetitive renewal of alligator teeth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E2009-18	11.5	80
103	Molecular signaling in feather morphogenesis. <i>Current Opinion in Cell Biology</i> , 2006 , 18, 730-41	9	76
102	Wnt3a gradient converts radial to bilateral feather symmetry via topological arrangement of epithelia. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 951-5	11.5	75
101	Successive formative stages of precartilaginous mesenchymal condensations in vitro: modulation of cell adhesion by Wnt-7A and BMP-2. <i>Journal of Cellular Physiology</i> , 1999 , 180, 314-24	7	75
100	Evo-Devo of amniote integuments and appendages. <i>International Journal of Developmental Biology</i> , 2004 , 48, 249-70	1.9	73
99	Genetic Mapping and Biochemical Basis of Yellow Feather Pigmentation in Budgerigars. <i>Cell</i> , 2017 , 171, 427-439.e21	56.2	70
98	Self-organization process in newborn skin organoid formation inspires strategy to restore hair regeneration of adult cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E7101-E7110	11.5	69
97	Tenascin is associated with articular cartilage development. <i>Developmental Dynamics</i> , 1993 , 198, 123-34	2.9	68
96	Activation of protein kinase A is a pivotal step involved in both BMP-2- and cyclic AMP-induced chondrogenesis. <i>Journal of Cellular Physiology</i> , 1997 , 170, 153-65	7	67
95	Asymmetric expression of Notch/Delta/Serrate is associated with the anterior-posterior axis of feather buds. <i>Developmental Biology</i> , 1997 , 188, 181-7	3.1	64
94	The cycling hair follicle as an ideal systems biology research model. <i>Experimental Dermatology</i> , 2010 , 19, 707-13	4	63
93	Adaptation to the sky: Defining the feather with integument fossils from mesozoic China and experimental evidence from molecular laboratories. <i>The Journal of Experimental Zoology</i> , 2003 , 298, 42-56		61

92	The biology of feather follicles. <i>International Journal of Developmental Biology</i> , 2004 , 48, 181-91	1.9	60
91	Progressive alopecia reveals decreasing stem cell activation probability during aging of mice with epidermal deletion of DNA methyltransferase 1. <i>Journal of Investigative Dermatology</i> , 2012 , 132, 2681-90	4.3	59
90	Molecular biology of feather morphogenesis: a testable model for evo-devo research. <i>The Journal of Experimental Zoology</i> , 2003 , 298, 109-22		59
89	Shift of localized growth zones contributes to skin appendage morphogenesis: role of the Wnt/beta-catenin pathway. <i>Journal of Investigative Dermatology</i> , 2003 , 120, 20-6	4.3	59
88	The tension biology of wound healing. <i>Experimental Dermatology</i> , 2019 , 28, 464-471	4	56
87	Regenerative hair waves in aging mice and extra-follicular modulators follistatin, dkk1, and sfrp4. <i>Journal of Investigative Dermatology</i> , 2014 , 134, 2086-2096	4.3	55
86	Physiological regeneration of skin appendages and implications for regenerative medicine. <i>Physiology</i> , 2012 , 27, 61-72	9.8	54
85	Topographical mapping of β and β keratins on developing chicken skin integuments: Functional interaction and evolutionary perspectives. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, E6770-9	11.5	53
84	Spots and stripes: pleomorphic patterning of stem cells via p-ERK-dependent cell chemotaxis shown by feather morphogenesis and mathematical simulation. <i>Developmental Biology</i> , 2009 , 334, 369-82	3.1	50
83	Analyses of regenerative wave patterns in adult hair follicle populations reveal macro-environmental regulation of stem cell activity. <i>International Journal of Developmental Biology</i> , 2009 , 53, 857-68	1.9	49
82	Homology and Potential Cellular and Molecular Mechanisms for the Development of Unique Feather Morphologies in Early Birds. <i>Geosciences (Switzerland)</i> , 2012 , 2, 157-177	2.7	48
81	Adhesion molecules in skeletogenesis: I. Transient expression of neural cell adhesion molecules (NCAM) in osteoblasts during endochondral and intramembranous ossification. <i>Journal of Bone and Mineral Research</i> , 1992 , 7, 1435-46	6.3	47
80	Local delivery of TGF beta2 can substitute for placode epithelium to induce mesenchymal condensation during skin appendage morphogenesis. <i>Developmental Biology</i> , 1996 , 179, 347-59	3.1	46
79	Genomic organization, transcriptomic analysis, and functional characterization of avian β and β keratins in diverse feather forms. <i>Genome Biology and Evolution</i> , 2014 , 6, 2258-73	3.9	44
78	Defining hair follicles in the age of stem cell bioengineering. <i>Journal of Investigative Dermatology</i> , 2007 , 127, 2098-100	4.3	43
77	Integument pattern formation involves genetic and epigenetic controls: feather arrays simulated by digital hormone models. <i>International Journal of Developmental Biology</i> , 2004 , 48, 117-35	1.9	41
76	Molecular histology in skin appendage morphogenesis. <i>Microscopy Research and Technique</i> , 1997 , 38, 452-65	2.8	40
75	Adhesion molecules in skin development: morphogenesis of feather and hair. <i>Annals of the New York Academy of Sciences</i> , 1991 , 642, 263-80	6.5	39

74	Module-based complexity formation: periodic patterning in feathers and hairs. <i>Wiley Interdisciplinary Reviews: Developmental Biology</i> , 2013 , 2, 97-112	5.9	38
73	Sculpting skin appendages out of epidermal layers via temporally and spatially regulated apoptotic events. <i>Journal of Investigative Dermatology</i> , 2004 , 122, 1348-55	4.3	37
72	STEM CELLS. Aging, alopecia, and stem cells. <i>Science</i> , 2016 , 351, 559-60	33.3	36
71	Macroenvironmental regulation of hair cycling and collective regenerative behavior. <i>Cold Spring Harbor Perspectives in Medicine</i> , 2014 , 4, a015198	5.4	36
70	Dynamic imaging of the growth plate cartilage reveals multiple contributors to skeletal morphogenesis. <i>Nature Communications</i> , 2015 , 6, 6798	17.4	33
69	Feather regeneration as a model for organogenesis. <i>Development Growth and Differentiation</i> , 2013 , 55, 139-48	3	33
68	Heterochronic truncation of odontogenesis in theropod dinosaurs provides insight into the macroevolution of avian beaks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 10930-10935	11.5	32
67	Engineering stem cells into organs: topobiological transformations demonstrated by beak, feather, and other ectodermal organ morphogenesis. <i>Current Topics in Developmental Biology</i> , 2006 , 72, 237-74	5.3	30
66	Diverse feather shape evolution enabled by coupling anisotropic signalling modules with self-organizing branching programme. <i>Nature Communications</i> , 2017 , 8, ncomms14139	17.4	29
65	Spatial and temporal variations in hemodynamic forces initiate cardiac trabeculation. <i>JCI Insight</i> , 2018 , 3,	9.9	27
64	Multiple Regulatory Modules Are Required for Scale-to-Feather Conversion. <i>Molecular Biology and Evolution</i> , 2018 , 35, 417-430	8.3	26
63	Rooster feathering, androgenic alopecia, and hormone-dependent tumor growth: what is in common?. <i>Differentiation</i> , 2004 , 72, 474-88	3.5	26
62	Regeneration of reptilian scales after wounding: neogenesis, regional difference, and molecular modules. <i>Regeneration (Oxford, England)</i> , 2014 , 1, 15-26		25
61	Shaping organs by a wingless-int/Notch/nonmuscle myosin module which orients feather bud elongation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E1452-61	11.5	25
60	Development and evolution of the amniote integument: current landscape and future horizon. <i>The Journal of Experimental Zoology</i> , 2003 , 298, 1-11		25
59	Dkk2/Frzb in the dermal papillae regulates feather regeneration. <i>Developmental Biology</i> , 2014 , 387, 167-78	3.8	24
58	Transcriptomic analyses of regenerating adult feathers in chicken. <i>BMC Genomics</i> , 2015 , 16, 756	4.5	24
57	From buds to follicles: matrix metalloproteinases in developmental tissue remodeling during feather morphogenesis. <i>Differentiation</i> , 2011 , 81, 307-14	3.5	22

56	Regulation of melanocyte stem cells in the pigmentation of skin and its appendages: Biological patterning and therapeutic potentials. <i>Experimental Dermatology</i> , 2019 , 28, 395-405	4	22
55	Instructive role of melanocytes during pigment pattern formation of the avian skin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 6884-6890	11.5	21
54	Comparative regenerative biology of spiny (<i>Acomys cahirinus</i>) and laboratory (<i>Mus musculus</i>) mouse skin. <i>Experimental Dermatology</i> , 2019 , 28, 442-449	4	21
53	Roles of GasderminA3 in Catagen-Telogen Transition During Hair Cycling. <i>Journal of Investigative Dermatology</i> , 2015 , 135, 2162-2172	4.3	21
52	Calcium oscillations coordinate feather mesenchymal cell movement by SHH dependent modulation of gap junction networks. <i>Nature Communications</i> , 2018 , 9, 5377	17.4	21
51	Contraction of basal filopodia controls periodic feather branching via Notch and FGF signaling. <i>Nature Communications</i> , 2018 , 9, 1345	17.4	20
50	Pattern formation today. <i>International Journal of Developmental Biology</i> , 2009 , 53, 653-8	1.9	20
49	SnapShot: Branching Morphogenesis. <i>Cell</i> , 2014 , 158, 1212-1212.e1	56.2	19
48	The "tao" of integuments. <i>Science</i> , 2016 , 354, 1533-1534	33.3	19
47	Generation of full-length cDNA library from single human prostate cancer cells. <i>BioTechniques</i> , 1999 , 27, 410-2, 414	2.5	16
46	The Making of a Flight Feather: Bio-architectural Principles and Adaptation. <i>Cell</i> , 2019 , 179, 1409-1423.e17.2	17.2	16
45	Getting to the Core of the Dermal Papilla. <i>Journal of Investigative Dermatology</i> , 2017 , 137, 2250-2253	4.3	14
44	Msx2 Supports Epidermal Competency during Wound-Induced Hair Follicle Neogenesis. <i>Journal of Investigative Dermatology</i> , 2018 , 138, 2041-2050	4.3	14
43	The river of stem cells. <i>Cell Stem Cell</i> , 2009 , 4, 100-2	18	14
42	Self-organizing hair peg-like structures from dissociated skin progenitor cells: New insights for human hair follicle organoid engineering and Turing patterning in an asymmetric morphogenetic field. <i>Experimental Dermatology</i> , 2019 , 28, 355-366	4	12
41	Comprehensive molecular and cellular studies suggest avian scutate scales are secondarily derived from feathers, and more distant from reptilian scales. <i>Scientific Reports</i> , 2018 , 8, 16766	4.9	12
40	Roles of EphB3/ephrin-B1 in feather morphogenesis. <i>International Journal of Developmental Biology</i> , 2012 , 56, 719-28	1.9	11
39	Simulating self-organization for multi-robot systems		10

38	Effect of in ovo retinoic acid exposure on forebrain neural crest: in vitro analysis reveals up-regulation of N-CAM and loss of mesenchymal phenotype. <i>Developmental Dynamics</i> , 1994 , 200, 89-102 ^{2,9}	10
37	Regulatory Differences in Natal Down Development between Altricial Zebra Finch and Precocial Chicken. <i>Molecular Biology and Evolution</i> , 2016 , 33, 2030-43	8.3 10
36	Quorum sensing and other collective regenerative behavior in organ populations. <i>Current Opinion in Genetics and Development</i> , 2016 , 40, 138-143	4.9 10
35	Emergence of differentially regulated pathways associated with the development of regional specificity in chicken skin. <i>BMC Genomics</i> , 2015 , 16, 22	4.5 9
34	Folding Keratin Gene Clusters during Skin Regional Specification. <i>Developmental Cell</i> , 2020 , 53, 561-576. 8.2	9
33	Comparative genomics and transcriptomics of <i>Chrysolophus</i> provide insights into the evolution of complex plumage coloration. <i>GigaScience</i> , 2018 , 7,	7.6 9
32	Turing patterning with and without a global wave. <i>PLoS Biology</i> , 2019 , 17, e3000195	9.7 8
31	Skin morphogenesis. Embryonic chicken skin explant cultures. <i>Methods in Molecular Biology</i> , 2000 , 136, 101-6	1.4 7
30	Avian Pigment Pattern Formation: Developmental Control of Macro- (Across the Body) and Micro- (Within a Feather) Level of Pigment Patterns. <i>Frontiers in Cell and Developmental Biology</i> , 2020 , 8, 620	5.7 7
29	Symmetry breaking of tissue mechanics in wound induced hair follicle regeneration of laboratory and spiny mice. <i>Nature Communications</i> , 2021 , 12, 2595	17.4 7
28	Morpho-regulation in diverse chicken feather formation: Integrating branching modules and sex hormone-dependent morpho-regulatory modules. <i>Development Growth and Differentiation</i> , 2019 , 61, 124-138	3 6
27	Niche Modulation of IGF-1R Signaling: Its Role in Stem Cell Pluripotency, Cancer Reprogramming, and Therapeutic Applications. <i>Frontiers in Cell and Developmental Biology</i> , 2020 , 8, 625943	5.7 6
26	Epidermal Darwinism and Competitive Equilibrium within the Epidermis. <i>Cell Stem Cell</i> , 2018 , 23, 627-629	5
25	Transcriptome analyses of reprogrammed feather / scale chimeric explants revealed co-expressed epithelial gene networks during organ specification. <i>BMC Genomics</i> , 2018 , 19, 780	4.5 4
24	Proper BMP Signaling Levels Are Essential for 3D Assembly of Hepatic Cords from Hepatoblasts and Mesenchymal Cells. <i>Digestive Diseases and Sciences</i> , 2015 , 60, 3669-80	4 3
23	Integrating Bioelectrical Currents and Ca Signaling with Biochemical Signaling in Development and Pathogenesis. <i>Bioelectricity</i> , 2020 , 2, 210-220	2 3
22	The Effects of Premature Tooth Extraction and Damage on Replacement Timing in the Green Iguana. <i>Integrative and Comparative Biology</i> , 2020 , 60, 581-593	2.8 3
21	Regional specific differentiation of integumentary organs: SATB2 is involved in Eand Ekeratin gene cluster switching in the chicken. <i>Developmental Dynamics</i> , 2021 ,	2.9 3

20	Human Fetal Scalp Dermal Papilla Enriched Genes and the Role of R-Spondin-1 in the Restoration of Hair Neogenesis in Adult Mouse Cells. <i>Frontiers in Cell and Developmental Biology</i> , 2020 , 8, 583434	5.7	2
19	The genetic basis for pigmentation phenotypes in poultry. <i>Burleigh Dodds Series in Agricultural Science</i> , 2020 , 67-106	2	2
18	Global feather orientations changed by electric current. <i>Science</i> , 2021 , 24, 102671	6.1	2
17	Regional Specific Differentiation of Integumentary Organs: Regulation of Gene Clusters within the Avian Epidermal Differentiation Complex and Impacts of SATB2 Overexpression. <i>Genes</i> , 2021 , 12,	4.2	2
16	Making region-specific integumentary organs in birds: evolution and modifications. <i>Current Opinion in Genetics and Development</i> , 2021 , 69, 103-111	4.9	2
15	The crest phenotype in domestic chicken is caused by a 197 bp duplication in the intron of HOXC10. <i>G3: Genes, Genomes, Genetics</i> , 2021 , 11,	3.2	2
14	Sonic hedgehog in feather morphogenesis: Induction of mesenchymal condensation and association with cell death 1996 , 207, 157		2
13	Self-assembly of biological networks via adaptive patterning revealed by avian intradermal muscle network formation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 10858-10867	11.5	1
12	Connectivity between nidopallium caudolateral and visual pathways in color perception of zebra finches. <i>Scientific Reports</i> , 2020 , 10, 19382	4.9	1
11	Variations of Mesozoic feathers: Insights from the morphogenesis of extant feather rachises. <i>Evolution; International Journal of Organic Evolution</i> , 2020 , 74, 2121-2133	3.8	1
10	Skin Cyst: A Pathological Dead-End With a New Twist of Morphogenetic Potentials in Organoid Cultures. <i>Frontiers in Cell and Developmental Biology</i> , 2020 , 8, 628114	5.7	1
9	MicroCT Imaging on Living Alligator Teeth Reveals Natural Tooth Cycling. <i>Methods in Molecular Biology</i> , 2017 , 1650, 355-362	1.4	0
8	The feather pattern autosomal barring in chicken is strongly associated with segregation at the MC1R locus. <i>Pigment Cell and Melanoma Research</i> , 2021 , 34, 1015-1028	4.5	0
7	The global regulatory logic of organ regeneration: circuitry lessons from skin and its appendages. <i>Biological Reviews</i> , 2021 , 96, 2573-2583	13.5	0
6	Tissue Mechanics in Haired Murine Skin: Potential Implications for Skin Aging. <i>Frontiers in Cell and Developmental Biology</i> , 2021 , 9, 635340	5.7	0
5	Epigenetic and Environmental Regulation of Skin Appendage Regeneration 2015 , 163-184		
4	026Altered Skin Wound Healing in Homeobox Gene Msx-2 Knockout Mice. <i>Wound Repair and Regeneration</i> , 2008 , 13, A4-A27	3.6	
3	Evo-Devo of Scales, Feathers, and Hairs 2020 , 1-17		

2 Evo-Devo of Scales, Feathers, and Hairs **2021**, 921-937

1 A quantitative image-based protocol for morphological characterization of cellular solids in feather shafts. *STAR Protocols*, **2021**, 2, 100661

1.4