

# Cheng-Ming Chuong

## List of Publications by Year in descending order

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132  
papers

7,770  
citations

43973

48  
h-index

56606

83  
g-index

133  
all docs

133  
docs citations

133  
times ranked

5629  
citing authors

#	ARTICLE	IF	CITATIONS
1	Cyclic dermal BMP signalling regulates stem cell activation during hair regeneration. <i>Nature</i> , 2008, 451, 340-344.	13.7	643
2	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.	0.9	362
3	An integrative approach to understanding bird origins. <i>Science</i> , 2014, 346, 1253-293.	6.0	240
4	Molecular Shaping of the Beak. <i>Science</i> , 2004, 305, 1465-1466.	6.0	224
5	The morphogenesis of feathers. <i>Nature</i> , 2002, 420, 308-312.	13.7	212
6	Evo-Devo of amniote integuments and appendages.. <i>International Journal of Developmental Biology</i> , 2004, 48, 249-270.	0.3	180
7	DEVELOPMENTAL BIOLOGY: The Turing Model Comes of Molecular Age. <i>Science</i> , 2006, 314, 1397-1398.	6.0	175
8	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, 1351-1356.	3.3	169
9	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.	2.0	155
10	$\beta$ -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.	0.9	153
11	Evo-Devo of feathers and scales: building complex epithelial appendages. <i>Current Opinion in Genetics and Development</i> , 2000, 10, 449-456.	1.5	144
12	The biology of feather follicles.. <i>International Journal of Developmental Biology</i> , 2004, 48, 181-191.	0.3	143
13	Reptile scale paradigm: Evo-Devo, pattern formation and regeneration. <i>International Journal of Developmental Biology</i> , 2009, 53, 813-826.	0.3	133
14	Sonic hedgehogin feather morphogenesis: Induction of mesenchymal condensation and association with cell death. <i>Developmental Dynamics</i> , 1996, 207, 157-170.	0.8	132
15	Mapping stem cell activities in the feather follicle. <i>Nature</i> , 2005, 438, 1026-1029.	13.7	128
16	Morpho-Regulation of Ectodermal Organs. <i>American Journal of Pathology</i> , 2004, 164, 1099-1114.	1.9	127
17	The making of a feather: Homeoproteins, retinoids and adhesion molecules. <i>BioEssays</i> , 1993, 15, 513-521.	1.2	119
18	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.	3.3	119

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19	The tension biology of wound healing. <i>Experimental Dermatology</i> , 2019, 28, 464-471.	1.4	116
20	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, 639-646.	0.3	113
21	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.	0.3	113
22	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, 26031-26035.	1.6	110
23	Distinct Wnt members regulate the hierarchical morphogenesis of skin regions (spinal tract) and individual feathers. <i>Mechanisms of Development</i> , 2004, 121, 157-171.	1.7	104
24	Genetic Mapping and Biochemical Basis of Yellow Feather Pigmentation in Budgerigars. <i>Cell</i> , 2017, 171, 427-439.e21.	13.5	101
25	Evo-Devo of amniote integuments and appendages. <i>International Journal of Developmental Biology</i> , 2004, 48, 249-70.	0.3	100
26	Mechanism of skin morphogenesis. I. Analyses with antibodies to adhesion molecules tenascin, N-CAM, and integrin. <i>Developmental Biology</i> , 1992, 150, 82-98.	0.9	97
27	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.	3.3	97
28	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.	3.3	94
29	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, 951-955.	3.3	91
30	Molecular signaling in feather morphogenesis. <i>Current Opinion in Cell Biology</i> , 2006, 18, 730-741.	2.6	86
31	The biology of feather follicles. <i>International Journal of Developmental Biology</i> , 2004, 48, 181-91.	0.3	85
32	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, 314-324.	2.0	84
33	Regenerative Hair Waves in Aging Mice and Extra-Follicular Modulators Follistatin, Dkk1, and Sfrp4. <i>Journal of Investigative Dermatology</i> , 2014, 134, 2086-2096.	0.3	80
34	Activation of protein kinase A is a pivotal step involved in both BMP-2- and cyclic AMP-induced chondrogenesis. , 1997, 170, 153-165.		77
35	Tenascin is associated with articular cartilage development. <i>Developmental Dynamics</i> , 1993, 198, 123-134.	0.8	75
36	The cycling hair follicle as an ideal systems biology research model. <i>Experimental Dermatology</i> , 2010, 19, 707-713.	1.4	75

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37	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, 2681-2690.	0.3	74
38	Topographical mapping of $\hat{1}\pm$ - and $\hat{1}^2$ -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.	3.3	74
39	Shift of Localized Growth Zones Contributes to Skin Appendage Morphogenesis: Role of the Wnt/ $\hat{1}^2$ -catenin Pathway. <i>Journal of Investigative Dermatology</i> , 2003, 120, 20-26.	0.3	71
40	Molecular biology of feather morphogenesis: A testable model for evo-devo research. <i>The Journal of Experimental Zoology</i> , 2003, 298B, 109-122.	1.4	69
41	Asymmetric Expression of Notch/Delta/Serrate Is Associated with the Anterior-Posterior Axis of Feather Buds. <i>Developmental Biology</i> , 1997, 188, 181-187.	0.9	68
42	Genomic Organization, Transcriptomic Analysis, and Functional Characterization of Avian $\hat{1}\pm$ - and $\hat{1}^2$ -Keratins in Diverse Feather Forms. <i>Genome Biology and Evolution</i> , 2014, 6, 2258-2273.	1.1	67
43	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, 298B, 42-56.	1.4	66
44	Physiological Regeneration of Skin Appendages and Implications for Regenerative Medicine. <i>Physiology</i> , 2012, 27, 61-72.	1.6	64
45	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, 857-868.	0.3	61
46	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, 369-382.	0.9	61
47	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.	1.0	58
48	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, 1435-1446.	3.1	54
49	Local Delivery of TGF $\hat{1}^2$ Can Substitute for Placode Epithelium to Induce Mesenchymal Condensation during Skin Appendage Morphogenesis. <i>Developmental Biology</i> , 1996, 179, 347-359.	0.9	52
50	Module-based complexity formation: periodic patterning in feathers and hairs. <i>Wiley Interdisciplinary Reviews: Developmental Biology</i> , 2013, 2, 97-112.	5.9	50
51	Molecular histology in skin appendage morphogenesis. , 1997, 38, 452-465.		47
52	Defining Hair Follicles in the Age of Stem Cell Bioengineering. <i>Journal of Investigative Dermatology</i> , 2007, 127, 2098-2100.	0.3	47
53	Multiple Regulatory Modules Are Required for Scale-to-Feather Conversion. <i>Molecular Biology and Evolution</i> , 2018, 35, 417-430.	3.5	46
54	Spatial and temporal variations in hemodynamic forces initiate cardiac trabeculation. <i>JCI Insight</i> , 2018, 3, .	2.3	46

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55	Feather regeneration as a model for organogenesis. <i>Development Growth and Differentiation</i> , 2013, 55, 139-148.	0.6	45
56	Macroenvironmental Regulation of Hair Cycling and Collective Regenerative Behavior. <i>Cold Spring Harbor Perspectives in Medicine</i> , 2014, 4, a015198-a015198.	2.9	45
57	Aging, alopecia, and stem cells. <i>Science</i> , 2016, 351, 559-560.	6.0	45
58	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.	1.4	44
59	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.	3.3	43
60	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.	0.3	43
61	Sculpting Skin Appendages Out of Epidermal Layers Via Temporally and Spatially Regulated Apoptotic Events. <i>Journal of Investigative Dermatology</i> , 2004, 122, 1348-1355.	0.3	42
62	Adhesion Molecules in Skin Development: Morphogenesis of Feather and Hair <sup>a</sup> . <i>Annals of the New York Academy of Sciences</i> , 1991, 642, 263-280.	1.8	42
63	Calcium oscillations coordinate feather mesenchymal cell movement by SHH dependent modulation of gap junction networks. <i>Nature Communications</i> , 2018, 9, 5377.	5.8	40
64	Symmetry breaking of tissue mechanics in wound induced hair follicle regeneration of laboratory and spiny mice. <i>Nature Communications</i> , 2021, 12, 2595.	5.8	40
65	Engineering Stem Cells into Organs: Topobiological Transformations Demonstrated by Beak, Feather, and Other Ectodermal Organ Morphogenesis. <i>Current Topics in Developmental Biology</i> , 2005, 72, 237-274.	1.0	39
66	Dynamic imaging of the growth plate cartilage reveals multiple contributors to skeletal morphogenesis. <i>Nature Communications</i> , 2015, 6, 6798.	5.8	39
67	Comparative regenerative biology of spiny ( <i>Acomys cahirinus</i> ) and laboratory ( <i>Mus</i> ) Tj ETQq1 1 0.784314 rgBT /Overlock 10	1.4	39
68	Transcriptomic analyses of regenerating adult feathers in chicken. <i>BMC Genomics</i> , 2015, 16, 756.	1.2	38
69	Diverse feather shape evolution enabled by coupling anisotropic signalling modules with self-organizing branching programme. <i>Nature Communications</i> , 2017, 8, ncomms14139.	5.8	37
70	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.	3.3	36
71	Regeneration of reptilian scales after wounding: neogenesis, regional difference, and molecular modules. <i>Regeneration (Oxford, England)</i> , 2014, 1, 15-26.	6.3	33
72	Dkk2/Frzb in the dermal papillae regulates feather regeneration. <i>Developmental Biology</i> , 2014, 387, 167-178.	0.9	32

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73	From buds to follicles: Matrix metalloproteinases in developmental tissue remodeling during feather morphogenesis. <i>Differentiation</i> , 2011, 81, 307-314.	1.0	29
74	Contraction of basal filopodia controls periodic feather branching via Notch and FGF signaling. <i>Nature Communications</i> , 2018, 9, 1345.	5.8	29
75	Development and evolution of the amniote integument: Current landscape and future horizon. <i>The Journal of Experimental Zoology</i> , 2003, 298B, 1-11.	1.4	28
76	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.	3.3	28
77	The Making of a Flight Feather: Bio-architectural Principles and Adaptation. <i>Cell</i> , 2019, 179, 1409-1423.e17.	13.5	28
78	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.	1.4	27
79	Rooster feathering, androgenic alopecia, and hormone-dependent tumor growth: What is in common?. <i>Differentiation</i> , 2004, 72, 474-488.	1.0	26
80	Roles of GasderminA3 in Catagen-Telogen Transition During Hair Cycling. <i>Journal of Investigative Dermatology</i> , 2015, 135, 2162-2172.	0.3	26
81	Getting to the Core of the Dermal Papilla. <i>Journal of Investigative Dermatology</i> , 2017, 137, 2250-2253.	0.3	24
82	SnapShot: Branching Morphogenesis. <i>Cell</i> , 2014, 158, 1212-1212.e1.	13.5	23
83	The evolution of integuments. <i>Science</i> , 2016, 354, 1533-1534.	6.0	23
84	Msx2 Supports Epidermal Competency during Wound-Induced Hair Follicle Neogenesis. <i>Journal of Investigative Dermatology</i> , 2018, 138, 2041-2050.	0.3	23
85	Pattern formation today. <i>International Journal of Developmental Biology</i> , 2009, 53, 653-658.	0.3	22
86	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.	1.6	22
87	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.	1.8	21
88	Folding Keratin Gene Clusters during Skin Regional Specification. <i>Developmental Cell</i> , 2020, 53, 561-576.e9.	3.1	18
89	Generation of Full-Length cDNA Library from Single Human Prostate Cancer Cells. <i>BioTechniques</i> , 1999, 27, 410-414.	0.8	16
90	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.	1.8	16

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91	The crest phenotype in domestic chicken is caused by a 195 bp duplication in the intron of <i>HOXC10</i> . <i>G3: Genes, Genomes, Genetics</i> , 2021, 11, .	0.8	16
92	Simulating self-organization for multi-robot systems. , 0, , .		15
93	Emergence of differentially regulated pathways associated with the development of regional specificity in chicken skin. <i>BMC Genomics</i> , 2015, 16, 22.	1.2	15
94	The River of Stem Cells. <i>Cell Stem Cell</i> , 2009, 4, 100-102.	5.2	14
95	Regulatory Differences in Natal Down Development between Altricial Zebra Finch and Precocial Chicken. <i>Molecular Biology and Evolution</i> , 2016, 33, 2030-2043.	3.5	14
96	Comparative genomics and transcriptomics of <i>Chrysolophus</i> provide insights into the evolution of complex plumage colouration. <i>GigaScience</i> , 2018, 7, .	3.3	14
97	Roles of EphB3/ephrin-B1 in feather morphogenesis. <i>International Journal of Developmental Biology</i> , 2012, 56, 719-728.	0.3	14
98	Turing patterning with and without a global wave. <i>PLoS Biology</i> , 2019, 17, e3000195.	2.6	13
99	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.	0.6	13
100	Quorum sensing and other collective regenerative behavior in organ populations. <i>Current Opinion in Genetics and Development</i> , 2016, 40, 138-143.	1.5	12
101	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.	0.8	11
102	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.	1.8	11
103	Tissue Mechanics in Haired Murine Skin: Potential Implications for Skin Aging. <i>Frontiers in Cell and Developmental Biology</i> , 2021, 9, 635340.	1.8	11
104	Cyclic growth of dermal papilla and regeneration of follicular mesenchymal components during feather cycling. <i>Development (Cambridge)</i> , 2021, 148, .	1.2	10
105	Skin Morphogenesis: Embryonic Chicken Skin Explant Cultures. , 2000, 136, 101-106.		9
106	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.	0.9	9
107	Transcriptome analyses of reprogrammed feather / scale chimeric explants revealed co-expressed epithelial gene networks during organ specification. <i>BMC Genomics</i> , 2018, 19, 780.	1.2	7
108	The feather pattern <i>autosomal barring</i> in chicken is strongly associated with segregation at the <i>MC1R</i> locus. <i>Pigment Cell and Melanoma Research</i> , 2021, 34, 1015-1028.	1.5	6

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109	Making region-specific integumentary organs in birds: evolution and modifications. <i>Current Opinion in Genetics and Development</i> , 2021, 69, 103-111.	1.5	6
110	Epidermal Darwinism and Competitive Equilibrium within the Epidermis. <i>Cell Stem Cell</i> , 2018, 23, 627-629.	5.2	5
111	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.	3.3	5
112	Defining Wound Healing Progression in Cetacean Skin: Characteristics of Full-Thickness Wound Healing in Fraser's Dolphins ( <i>Lagenodelphis hosei</i> ). <i>Animals</i> , 2022, 12, 537.	1.0	5
113	Variations of Mesozoic feathers: Insights from the morphogenesis of extant feather rachises. <i>Evolution; International Journal of Organic Evolution</i> , 2020, 74, 2121-2133.	1.1	4
114	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.	1.8	4
115	The global regulatory logic of organ regeneration: circuitry lessons from skin and its appendages. <i>Biological Reviews</i> , 2021, 96, 2573-2583.	4.7	4
116	Global feather orientations changed by electric current. <i>IScience</i> , 2021, 24, 102671.	1.9	4
117	Regional specific differentiation of integumentary organs: <i>SATB2</i> is involved in keratin gene cluster switching in the chicken. <i>Developmental Dynamics</i> , 2022, 251, 1490-1508.	0.8	4
118	Regional Specific Differentiation of Integumentary Organs: Regulation of Gene Clusters within the Avian Epidermal Differentiation Complex and Impacts of <i>SATB2</i> Overexpression. <i>Genes</i> , 2021, 12, 1291.	1.0	4
119	The genetic basis for pigmentation phenotypes in poultry. <i>Burleigh Dodds Series in Agricultural Science</i> , 2020, , 67-106.	0.1	4
120	Editorial: Hair Follicle Stem Cell Regeneration in Aging. <i>Frontiers in Cell and Developmental Biology</i> , 2021, 9, 799268.	1.8	4
121	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, 3669-3680.	1.1	3
122	MicroCT Imaging on Living Alligator Teeth Reveals Natural Tooth Cycling. <i>Methods in Molecular Biology</i> , 2017, 1650, 355-362.	0.4	3
123	Connectivity between nidopallium caudolateral and visual pathways in color perception of zebra finches. <i>Scientific Reports</i> , 2020, 10, 19382.	1.6	3
124	Integrating Bioelectrical Currents and $Ca^{2+}$ Signaling with Biochemical Signaling in Development and Pathogenesis. <i>Bioelectricity</i> , 2020, 2, 210-220.	0.6	3
125	<i>Cis</i> -acting mutation affecting <i>GJA5</i> transcription is underlying the <i>Melanotic</i> within-feather pigmentation pattern in chickens. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	3
126	Understanding skin morphogenesis across developmental, regenerative and evolutionary levels. <i>Experimental Dermatology</i> , 2019, 28, 327-331.	1.4	2

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127	Sonic hedgehog in feather morphogenesis: Induction of mesenchymal condensation and association with cell death. , 1996, 207, 157.		2
128	A quantitative image-based protocol for morphological characterization of cellular solids in feather shafts. STAR Protocols, 2021, 2, 100661.	0.5	1
129	Altered Skin Wound Healing in Homeobox Gene Msx-2 Knockout Mice. Wound Repair and Regeneration, 2008, 13, A4-A27.	1.5	0
130	Epigenetic and Environmental Regulation of Skin Appendage Regeneration. , 2015, , 163-184.		0
131	Evo-Devo of Scales, Feathers, and Hairs. , 2021, , 921-937.		0
132	Evo-Devo of Scales, Feathers, and Hairs. , 2020, , 1-17.		0