

GUANGCHUANG YU

Professor of Bioinformatics at [Southern Medical University](#). I have developed more than 20 R packages, including [clusterProfiler](#), [ChIPseeker](#), [treeio](#) and [ggtree](#), to help biologists to explore and understand their data.

I am broadly interested in bioinformatics, metagenomics, molecular evolution, data integration and visualization.

RESEARCH EXPERIENCE

- present
|
2018
- **Professor**
School of Basic Medical Sciences 📍 Southern Medical University
• 2019-present, Associate director, Department of Bioinformatics
- 2018
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2017
- **Post-doctoral Fellow**
State Key Laboratory of Infectious Diseases
📍 The University of Hong Kong
- 2013
|
2009
- **Bioinformatician**
Key Laboratory of Functional Protein Research of Guangdong
Higher Education Institutes 📍 Jinan University

EDUCATION

- 2017
|
2013
- **PhD., Bioinformatics**
The University of Hong Kong 📍 Hong Kong, CN
• Thesis: Big-data computational methods for studying molecular evolution: from accurate genome assembly to phylogenetic analysis and data integration
- 2009
|
2006
- **M.S., Biochemistry and Molecular Biology**
Anhui Medical University 📍 Hefei, CN
• Thesis: miRNA靶基因计算分析新方法及其应用研究
- 2005
|
2001
- **B.S., Biotechnology**
South China Agricultural University 📍 Guangzhou, CN
- 2018
- **南方医科大学高层次人才“不忘初心 牢记使命”学习教育**
延安干部培训学院 📍 Yan'an, CN
- 2015
- **Train the Trainers**
Institut Pasteur 📍 Paris, FR

CERTIFICATE



CONTACT

- ✉ guangchuangyu@gmail.com
- 🐦 [guangchuangyu](#)
- 🔗 github.com/GuangchuangYu
- 🔗 guangchuangyu.github.io
- 🗣 [biobabble](#)
- 📞 (86) 13826432521

SELECTED R PACKAGES

- NGS
 - ChIPseeker
- Ontology
 - clusterProfiler
 - DOSE
 - enrichplot
 - GOSemSim
- Phylogeny
 - tidytree
 - treeio
 - ggtree
- Visualization
 - ggimage
 - ggplotify
 - seqcombo

Last updated on 2020-02-18.

- 2015 ● **Certificate of Teaching and Learning in Higher Education**
Centre for Enhancement of Teaching and Learning
📍 The University of Hong Kong

TEACHING EXPERIENCE

- 2020
|
2019 ● **基因组学**
School of Basic Medical Sciences 📍 Southern Medical University
• Undergraduate level class
- 2019 ● **BMB209: Workshops in Applied Bioinformatics**
Department of Biochemistry and Molecular Biology 📍 University of Southern Denmark
• PhD level class, invited lecture
- **生物信息学科研训练**
School of Basic Medical Sciences 📍 Southern Medical University
• Undergraduate level class
- **基础医学新进展讲座**
School of Basic Medical Sciences 📍 Southern Medical University
• Undergraduate level class
- 2012
|
2011 ● **功能蛋白质研究**
College of Life Science and Technology 📍 Jinan University
• Graduate level class

GRANTS

- 2020
|
2018 ● **南方医科大学第三层次人才引进科研项目 (G618289088)**
PI, CNY ¥1,500,000
- 2013 ● **hnRNPK蛋白在调控人肺癌细胞周期胞质分裂中的作用研究 (21613414)**
PI, CNY ¥100,000, 中央高校基本科研业务费专项资金
- 2011 ● **Hela细胞周期动态蛋白质组学分析 (21611303)**
PI, CNY ¥20,000, 中央高校基本科研业务费专项资金

BOOKS

- 2020 ● **Chapter 11: Gene Ontology Semantic Similarity Analysis Using GOSemSim**
Stem Cell Transcriptional Networks: Methods and Protocols, Methods in Molecular Biology, vol. 2117. Benjamin Kidder (ed), Springer Science+Business Media
• G Yu

2012



生物信息学II

《功能蛋白质研究》. 385-425. 何庆瑜（主编），科学出版社（“十二五”国家重点图书出版规划项目）

· 余光创



PUBLICATIONS

2020



treeio: an R package for phylogenetic tree input and output with richly annotated and associated data

Molecular Biology and Evolution. 2020, 37(2):599-603.

· LG Wang, TTY Lam, S Xu, Z Dai, L Zhou, T Feng, P Guo, CW Dunn, BR Jones, T Bradley, H Zhu, Y Guan, Y Jiang, **G Yu***
· Impact Factor = 14.797



Rideogram: drawing SVG graphics to visualize and map genome-wide data on the idiograms

PeerJ Computer Science. 2020, 6:e251.

· Z Hao, D Lv, Y Ge, J Shi, D Weijers, **G Yu***, J Chen*

2018



Two methods for mapping and visualizing associated data on phylogeny using ggtree

Molecular Biology and Evolution. 2018, 35(12):3041-3043.

· **G Yu***, TTY Lam, H Zhu, Y Guan*
· Impact Factor = 14.797



Using meshes for MeSH term enrichment and semantic analyses

Bioinformatics. 2018, 34(21):3766-3767.

· G Yu

2017



ggtree: an R package for visualization and annotation of phylogenetic trees with their covariates and other associated data

Methods in Ecology and Evolution. 2017, 8(1):28-36

· **G Yu**, DK Smith, H Zhu, Y Guan, TTY Lam*
· 🏆 ESI Highly Cited Paper

2016



ReactomePA: an R/Bioconductor package for reactome pathway analysis and visualization

Molecular BioSystems. 2016, 12(2):477-479

· **G Yu**, QY He*
· 🏆 ESI Highly Cited Paper

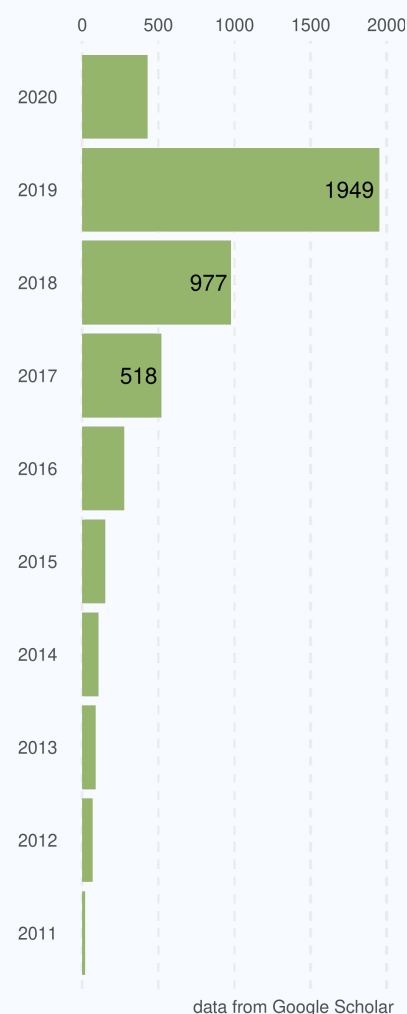


Integrated Translatomics with Proteomics to Identify Novel Iron-Transporting Proteins in *Streptococcus pneumoniae*

Frontiers in Microbiology. 2016, 7:78

· XY Yang, K He, G Du, X Wu, **G Yu**, Y Pan, G Zhang*, X Sun*, QY He*

· Citation = 4649
· H-index = 17
· I10-index = 22



- **Genetic characterization of highly pathogenic H5 influenza viruses from poultry in Taiwan, 2015**
Infection, Genetics and Evolution. 2016, 38:96-100
 • PY Huang, CCD Lee, CH Yip, CL Cheung, G Yu, TTY Lam, DK Smith, H Zhu*, Y Guan*
- 2015 ● **ChIPseeker: an R/Bioconductor package for ChIP peak annotation, comparison and visualization**
Bioinformatics. 2015, 31(14):2382-2383
 • G Yu*, LG Wang, QY He*
 • 🏆 ESI Highly Cited Paper
- **DOSE: an R/Bioconductor package for Disease Ontology Semantic and Enrichment analysis**
Bioinformatics. 2015, 31(4):608-609
 • G Yu*, LG Wang, GR Yan, QY He*
- **ACK1 Promotes Gastric Cancer Epithelial-Mesenchymal Transition and Metastasis through AKT-POU2F1-ECD Signaling**
Journal of Pathology. 2015, 236(2):175-185
 • SH Xu, JZ Huang, ML Xu, G Yu, XF Yin, D Chen*, GR Yan*
- **Proteomic analysis on the copper resistance of *Streptococcus pneumonia***
Metallomics. 2015, 7(3):448-454
 • Z Guo, J Han, XY Yang, K Cao, K He, G Du, G Zeng, L Zhang, G Yu, Z Sun, QY He*, X Sun*
- **Proteomic analysis on the antibacterial activity of a Ru(II) complex against *Streptococcus pneumonia***
Journal of Proteomics. 2015, 115:107-116
 • XY Yang, L Zhang, J Liu, N Li, G Yu, K Cao, J Han, G Zeng, Y Pan, X Sun*, QY He*
- 2014 ● **Proteomic analysis of putative heme-binding proteins in *Streptococcus pyogenes***
Metallomics. 2014, 6(8):1451-1459
 • N Wang#, J Zhang#, L Zhang, XY Yang, N Li, G Yu, J Han, K Cao, Z Guo, X Sun*, QY He*
- 2013 ● **Putative cobalt- and nickel-binding proteins and motifs in *Streptococcus pneumonia***
Metallomics. 2013, 5(7):928-935
 • X Sun#, G Yu#, Q Xu, N Li, C Xiao, X Yin, K Cao, J Han, QY He*


- **A novel andrographolide derivative AL-1 exerts its cytotoxicity on K562 cells through a ROS-dependent mechanism**
Proteomics. 2013, 13(1):169-178
• YY Zhu[#], G Yu[#], Y Zhang, Z Xu, YQ Huang, GR Yan^{*}, QY He^{*}
- **A DNA-Based Semantic Fusion Model for Remote Sensing Data**
PLoS One. 2013, 8(10):e77090
• H Sun^{*}, J Weng, G Yu, RH Massawe
- **Quantitative Proteomics Characterization on the Anti-tumor Effects of Isodexylephantopin against Nasopharyngeal Carcinoma**
Proteomics. 2013, 13(21):3222-3232
• GR Yan[#], Z Tan[#], Y Wang, ML Xu, G Yu, Y Li^{*}, QY He^{*}
- **Design, SAR, angiogenic activities evaluation and pro-angiogenic mechanism of new marine cyclopeptide analogs**
Current Medicinal Chemistry. 2013, 20(9):1183-1194
• J Li, X Lu, Q Wu, G Yu, Z Xu, L Qiu, Z Pei, Y Lin, J Pang^{*}
- **Proteomic investigation of the interactome of FMNL1 in hematopoietic cells unveils a role in calcium-dependent membrane plasticity**
Journal of Proteomics. 2013, 78:72-82
• Y Han, G Yu, H Sarioglu, A Caballero-Martinez, F Schlott, M Ueffing, H Haase, C Peschel, AM Krackhardt^{*}
- 2012 ● **LXtoo: an integrated live Linux distribution for the bioinformatics community**
BMC Research Notes. 2012, 5(1):360
• G Yu[#], LG Wang[#], XH Meng, QY He^{*}
- **clusterProfiler: an R package for comparing biological themes among gene clusters**
OMICS: A Journal of Integrative Biology. 2012, 16(5):284-287
• G Yu, LG Wang, Y Han, QY He^{*}
• 🏆 ESI Highly Cited Paper
- **Cellular MicroRNA let-7c Inhibits M1 Protein Expression of the H1N1 Influenza A Virus in Infected Human Lung Epithelial Cells**
Journal of Cellular and Molecular Medicine. 2012, 16(10):2539-2546
• Y Ma[#], J Yang[#], X Fan[#], H Zhao, W Hu, Z Li, G Yu, X Ding, J Wang, X Bo, X Zheng, Z Zhou^{*}, S Wang^{*}
- **Genistein-induced mitotic arrest of gastric cancer cells by downregulating KIF20A, a proteomics study**
Proteomics. 2012, 12(14):2391-2399
• GR Yan[#], FY Zhou[#], BL Dang, Y Zhang, G Yu, X Liu, QY He^{*}

- 2011
- **Functional similarity analysis of human virus-encoded miRNAs**
Journal of Clinical Bioinformatics. 2011, 1(1):15
· G Yu, QY He*
 - **A new method for measuring functional similarity of microRNAs**
Journal of Integrated OMICS. 2011, 1(1):49-54
· G Yu#, CL Xiao#, X Bo, CH Lu, Y Qin, S Zhan, QY He*
 - **Phosphoproteome profile of human lung cancer cell line A549**
Molecular BioSystems. 2011, 7(2):472-479
· G Yu#, CL Xiao#, CH Lu#, HT Jia, F Ge, W Wang, XF Yin, HL Jia, JX He*, QY He*
 - **Proteomic Analysis of Membrane Proteins from *Streptococcus pneumoniae* with Multiple Separation Methods plus High Accuracy Mass Spectrometry**
OMICS: A Journal of Integrative Biology. 2011, 15(10):683-694
· X Sun#, XY Yang#, XF Yin, G Yu, CL Xiao, X He, QY He*
- 2010
- **GOSemSim: an R package for measuring semantic similarity among GO terms and gene products**
Bioinformatics. 2010, 26(7):976-978
· G Yu#, F Li#, Y Qin, X Bo*, Y Wu, S Wang*
· 🏆 ESI Highly Cited Paper
- 2009
- **结合基因组分析预测炎症相关miRNA及其靶标**
军事医学科学院院刊. 2009, 33(3):245-247
· 余光创, 王超, 许尹, 伯晓晨, 王升启*, 秦宜德*
- 2007
- **依赖于5'端非编码区高级结构的真核生物mRNA翻译调控**
中国生物化学与分子生物学报. 2007, 23(11):881-887
· 余光创, 秦宜德, 伯晓晨, 王升启*



CONFERENCE PROCEEDINGS

- 2019
- **R语言在生物信息学数据可视化中的应用**
第八届南方医院博士论坛 - 研而有信之修“生”养“信”, Oct 2019
📍 Southern Medical University
 - **Data integration and visualization of phylogenetic trees**
Managing Zoonotic Infections in the era of One Health, Oct 2019
📍 Guangzhou Medical University
 - **Two methods for mapping and visualizing associated data on phylogeny using ggtree**
第一届南方医科大学基础医学学术年会, Jan 2019
📍 Southern Medical University

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- 2018 ● **Data integration and visualization of phylogenetic trees**
The 3rd South Lake Innovation Forum for International Young Talents, May 2018
📍 Huazhong Agricultural University
- 2017 ● **ggtree for tree visualization & annotation**
Phylogenetic tree visualization workshop/hackathon, May 2017
📍 The Field Museum of Natural History
- **Computational Methods in Ecology and Evolution**
The Second International Workshop on Environmental Microbiomes, Apr 2017
📍 Sun Yat-sen University
- 2016 ● **ggtree for visualization and annotation of phylogenetic trees**
The 9th China-R Conference, May 2016 📍 Renmin University of China