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## 聚焦一流 瞩目前沿 我校生理科学团队参加第39届国际生理科学联合会大会

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由国际生理科学联合会（International Union of Physiological Sciences, IUPS）和中国生理学会（Chinese Association for Physiological Sciences, CAPS）共同主办的第39届国际生理科学联合会大会（IUPS 2022）于近期在北京召开，大会采取在线会议模式，会议主题为“生命的奇迹——整合与转化”，全球71个国家和地区有4000余人参加盛会。

开幕式上，大会共同主席和中国生理学会理事长王韵教授、国际生理科学联合会主席Julie Chan分别代表主办方致辞，受邀出席会议并致辞的嘉宾有中国科学技术协会党组成员、国际合作部部长罗晖，大会荣誉主席、中国生理学会名誉会员、美国“四院”院士、中国科学院和工程院外籍院士、加州大学圣地亚哥分校钱煦教授，大会荣誉主席、中国生理学会第20届理事长、中国科学院院士、复旦大学杨雄里教授，国际科学理事会主席Peter Gluckman等。开幕式由IUPS2022国际学术委员会共同主席及中国生理学会副理事长陈应城教授主持，大会共同主席中国生理学会监事长、IUPS执委王晓民教授正式宣布开幕。



## 中国生理学会理事长王韵和IUPS主席Julie Chan致辞

在副院长郑兰荣教授的指导下，我校生理学省级学术与技术带头人、中国生理学会常务理事汪萌芽教授和校生物学一流学科负责人郑超教授精心组织生理科学团队共77人参加会议，提交英文论文摘要19篇并作交流，其中研究生18人提交英文摘要8篇，“启明星”小组成员46人提交英文摘要8篇，均以英文墙报展示的形式参加了线上学术交流，部分墙报还被遴选参加会议组织的墙报专题讨论，取得了良好的国际交流效果。同时，鉴于我校积极组织专业教师和本硕学生参加会议，特别是组织本科生参会并提交突出成果，我校团队在中国生理学会常务理事会会议上受到表扬。

**Physiome curation system for reproducible models**  
Peter Hunter<sup>1</sup>, Karin Lundengård<sup>1</sup>, David Nickerson<sup>1</sup>, Anand Rampadarath<sup>1</sup>, Tommy Yu<sup>1</sup>, Shelley Fong<sup>1</sup>  
<sup>1</sup>Auckland Bioengineering Institute

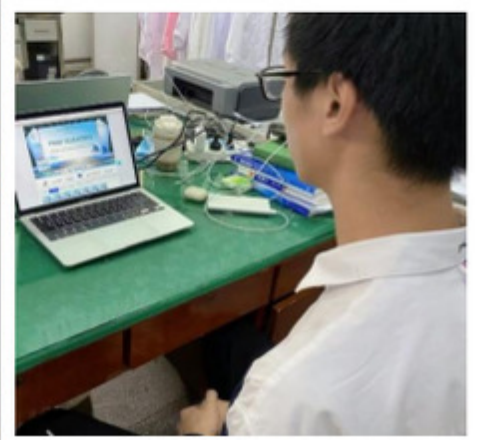
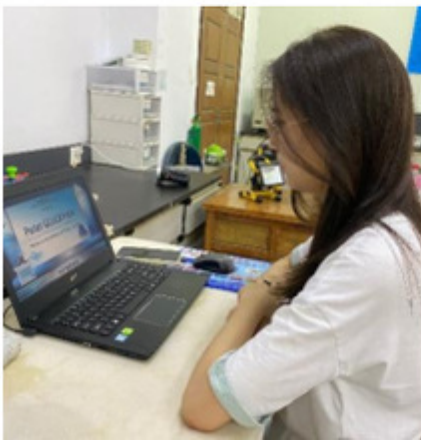
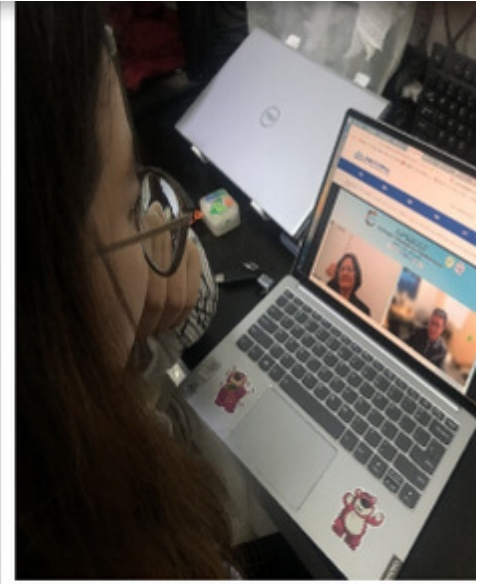
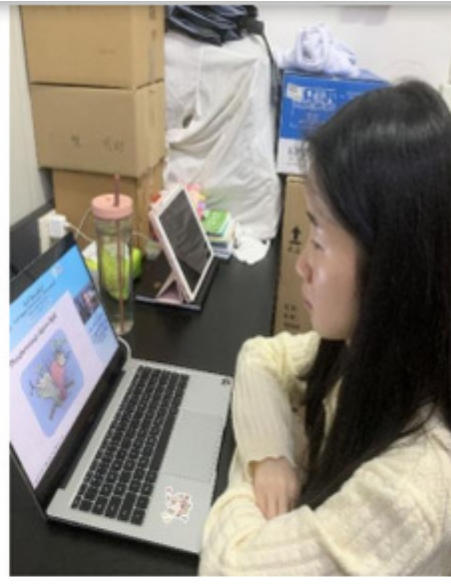
**Reproducible Discoverable Reusable**

**Your results deserve to be seen!**  
In modelling, the model code is the result, and yet the format of standard scientific articles is not suited for presenting code and it is often excluded. *Physiome* is a journal committed to setting a new standard for scientific publishing of physiological models that makes your modelling results reproducible, discoverable, and reusable.

**What is a *Physiome* publication?**  
Every *Physiome* publication is connected to a Primary article in a domain specific journal, showing the model validation and the scientific relevance. The *Physiome* publication complements your primary article and ensures model reproducibility, reusability and discoverability. The format encourages modularity, facilitating the combination of different models to develop the next level of

**PHYSIOME**  
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Lei Xu-P09-002  
Lei Xu-P09-002  
Xue-Qun Chen, China  
Karin Lundengård (AB) P10-001  
Maud Demarest...  
Maud Demarest P08-003  
Staff-Chunyang Li



### 线上参会

**IUPS2022**  
The 39<sup>th</sup> Congress of International Union of Physiological Sciences  
May 7-11, 2022 Beijing, China  
Marvels of Life - Integration and Translation

### Identification and characterization of a prokaryotic 6-4 photolyase from *Synechococcus elongatus* with a deazariboflavin antenna chromophore

Lai Xu, Simeng Chen, Chenchen Zhou, Chexui Liu  
Anhui Province Key Laboratory of Active Biological Macro-molecules, Wannan Medical College, Wuhu, Anhui, China

*Synechococcus elongatus*, formerly known as *Anacystis nidulans*, is a representative species of cyanobacteria. It is also a model organism for the study of photoreactivation, which can be fully photoreactivated even after receiving high UV doses. However, for a long time, only one photolyase was found in *S. elongatus* that is only able to photorepair UV induced cyclobutane pyrimidine dimers (CPDs) in DNA.

Here, we characterize another photolyase in *S. elongatus*, which belongs to iron-sulfur

The thin-layer chromatography of authentic FAD (lane 1), and the supernatants of heat denatured SePhrB without B-HDF (lane 2), *Agrobacterium fabrum* PhrB (a FeS-BCP containing DMRL, lane 3), SePhrA with B-HDF (lane 4), and SePhrB with B-HDF (lane 5).

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**Mr.Vc v2: An updated version of database with a special focus on experimental validated interactions in *V. cholerae***  
Zhi-yaan Zhang, Guozhong Chen, Mingquan Ye  
School of Medical Information, Wannan Medical College

**Abstract**  
Mr.Vc v2 is an updated version of Mr.Vc database that specially focus on experimental validated interactions in *V. cholerae*. In this study, Mr.Vc v2 added a new functional module named "Interactions", which dedicated to collect all experimental validated interactions data for purpose of update and reconstruction of regulatory network in *V. cholerae*, in total 1,292 entries of interactions were collected, including 496 protein-chemical interactions, 472 protein-protein interactions, 306 TF (Transcription Factor) - gene interactions and 42 interactions of *V. cholerae* with host or virus, most of which obtained from 402 literature by text-mining. Meanwhile, Mr.Vc v2 also provided detailed annotation of biochemical data, interactions and corresponding evidences. In addition, Mr.Vc v2 updated other three functional modules that included "Genes",

**Figure 1:** A clear overview of the data contents, data organization in Mr.Vc v2 and functionalities and usage of our database.

7/20/2022  
Mr.Vc v2: An updated version of database with a special focus on experimental validated interactions in *V. cholerae*.  
Zhi-yaan Zhang  
Wannan Medical College

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**XGBoost-Based and Tumor-Immune Characterized Gene Signature for the Prediction of Metastatic Status in Breast Cancer**  
Qingqing Li, Mingquan Ye  
Research Center of Health Big Data Mining and Applications, School of Medical Information, Wannan Medical College, Wuhu, P.R. China

**Background:** For a long time, breast cancer has been a leading cancer diagnosed in women worldwide, and approximately 90% of cancer-related deaths are caused by metastasis. For this reason, finding new biomarkers related to metastasis is an urgent task to predict the metastatic status of breast cancer and provide new therapeutic targets.

**Methods:** In this research, an efficient model of eXtreme Gradient Boosting (XGBoost) optimized by a grid search algorithm is established to realize auxiliary identification of metastatic breast tumors based on gene

**Figure 1:** XGBoost-based and tumor-immune characterized gene signature for the prediction of metastatic status in breast cancer.

7/20/2022  
XGBoost Based and Tumor-Immune Characterized Gene Signature for the Prediction of Metastatic Status in Breast Cancer  
Qingqing Li  
Wannan Medical College

我校教师进行线上墙报讨论和展示

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**Overexpression of PDGFR $\alpha$  inhibits proliferation and invasion of glioblastoma**

**Abstract**  
Glioblastoma (GB) is a highly aggressive and lethal brain tumor. The overexpression of PDGFR $\alpha$  is a hallmark of GB and is associated with poor prognosis. In this study, we investigated the effect of PDGFR $\alpha$  overexpression on the proliferation and invasion of GB cells. We found that overexpression of PDGFR $\alpha$  significantly inhibited the proliferation and invasion of GB cells in vitro and in vivo. These results suggest that PDGFR $\alpha$  overexpression may be a potential therapeutic target for GB.

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**Activation of M<sub>3</sub>-AChR and IP<sub>3</sub>/Ca<sup>2+</sup>/PKC signaling pathways by pilocarpine results in enhancement of glycine currents in spinal cord ventral horn neurons**

**Abstract**  
Pilocarpine is a muscarinic acetylcholine receptor (mAChR) agonist that has been shown to enhance glycine currents in spinal cord ventral horn neurons. In this study, we investigated the effect of pilocarpine on the activation of M<sub>3</sub>-AChR and IP<sub>3</sub>/Ca<sup>2+</sup>/PKC signaling pathways. We found that pilocarpine significantly enhanced the activation of these pathways, leading to an increase in glycine currents. These results suggest that pilocarpine may be a potential therapeutic agent for spinal cord injury.

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**Receptor kinetics analyses of synaptic transmission inhibition by norepinephrine in spinal cord motoneurons *in vitro***

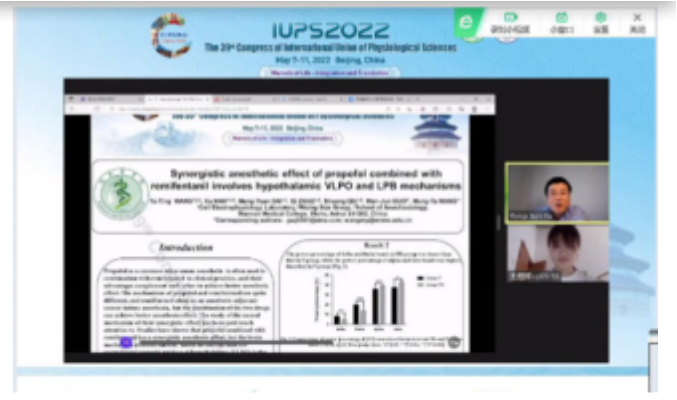
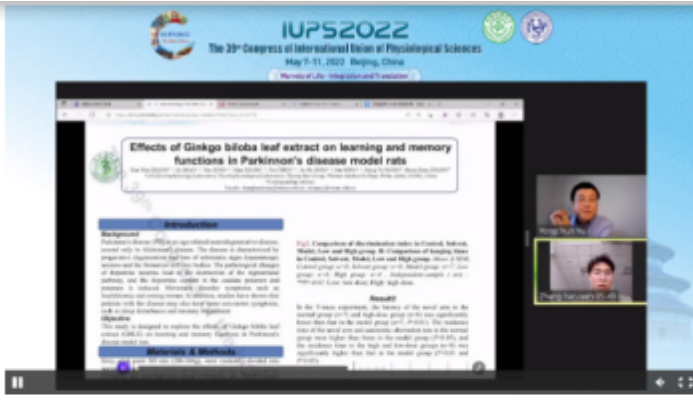
**Abstract**  
Norepinephrine (NE) is a neurotransmitter that has been shown to inhibit synaptic transmission in spinal cord motoneurons. In this study, we investigated the effect of NE on the receptor kinetics of synaptic transmission inhibition. We found that NE significantly inhibited the receptor kinetics of synaptic transmission inhibition. These results suggest that NE may be a potential therapeutic agent for spinal cord injury.

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**GSDMD alleviates LPS-induced acute kidney injury via the caspase-1/11 pathway**

**Abstract**  
GSDMD is a protein that has been shown to alleviate LPS-induced acute kidney injury. In this study, we investigated the effect of GSDMD on the caspase-1/11 pathway. We found that GSDMD significantly alleviated the caspase-1/11 pathway, leading to a reduction in acute kidney injury. These results suggest that GSDMD may be a potential therapeutic agent for acute kidney injury.

研究生进行线上墙报讨论和展示



### “启明星”小组成员进行线上墙报讨论和展示

大会上，我校8名“启明星”小组成员进行了线上墙报展示和讨论交流，在国际舞台上充分彰显了“启明星”小组创新型人才培养的质量，同时也凸显了“启明星”小组的规模化、品牌化效应。此外，小组成员们根据其课题研究的方向积极参加相关专业会议，聆听英文原声学术报告，不仅为他们课题下一步研究和新课题的设计进一步打开了思路，而且在科学精神、治学态度、严谨风范等方面也受到了良好熏陶。

IUPS大会历来被称为国际生理科学界的奥林匹克级会议。本次大会的高端学术报告交流和多样化墙报展示，是一场视觉和听觉合一的学术盛宴，既集中展示了我校创新型人才的培养成效，同时也极大地拓宽了与会师生的学术视野，特别是围绕相关学科前沿问题的探讨，为我校生理科学的整合模式及发展路径提供了重要参照。我校生理科学团队将抓住有利契机，坚持以学生创新能力训练为核心，聚焦“开拓一流本科、建设一流专业、培养一流人才”目标，以学科发展为导向，不断推动高质量人才培养，为我校“大学梦”的实现提供有力支撑。

(张环环/文、图 王军、侯东晓/审)

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