Visualizing your research!

グラフィカルアブストラクト概要編

京都大学高等研究院 ヒト生物学高等研究拠点（ASHBi）
リサーチコーディネーター
井上寛美

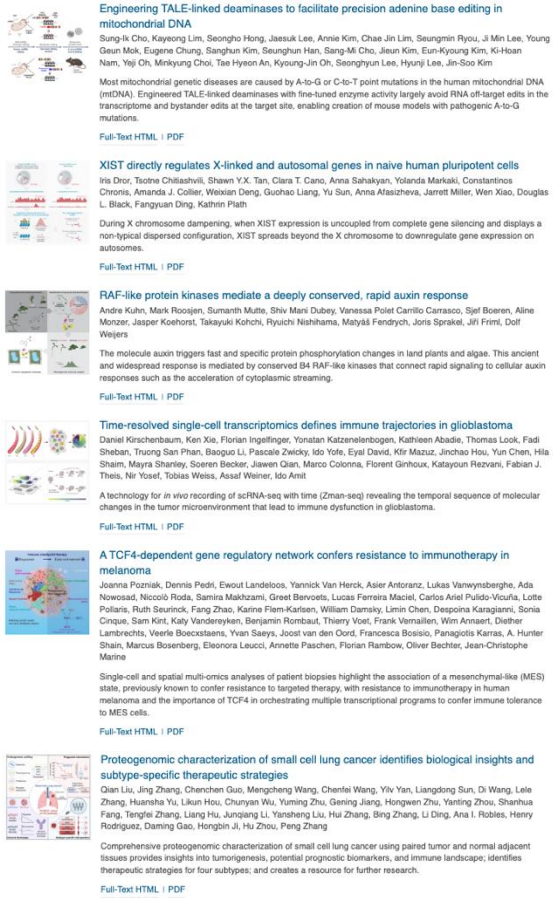
今日のアジェンダ

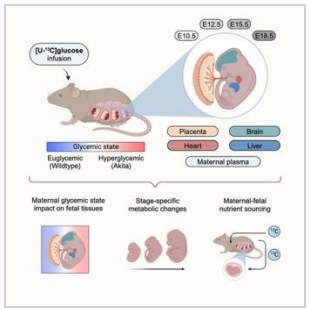
- ❑ グラフィカルアブストラクトとは？
- ❑ 様々なグラフィカルアブストラクト
- ❑ 制作を始める前に考えるべきことと制作フロー
- ❑ 作図のためのツール

グラフィカルアブストラクトとは？

グラフィカルアブストラクトの役割/ Cell Press

https://www.cell.com/issue/S0092-8674(23)X0002-6





Atlas of fetal metabolism during mid-to-late gestation and diabetic pregnancy

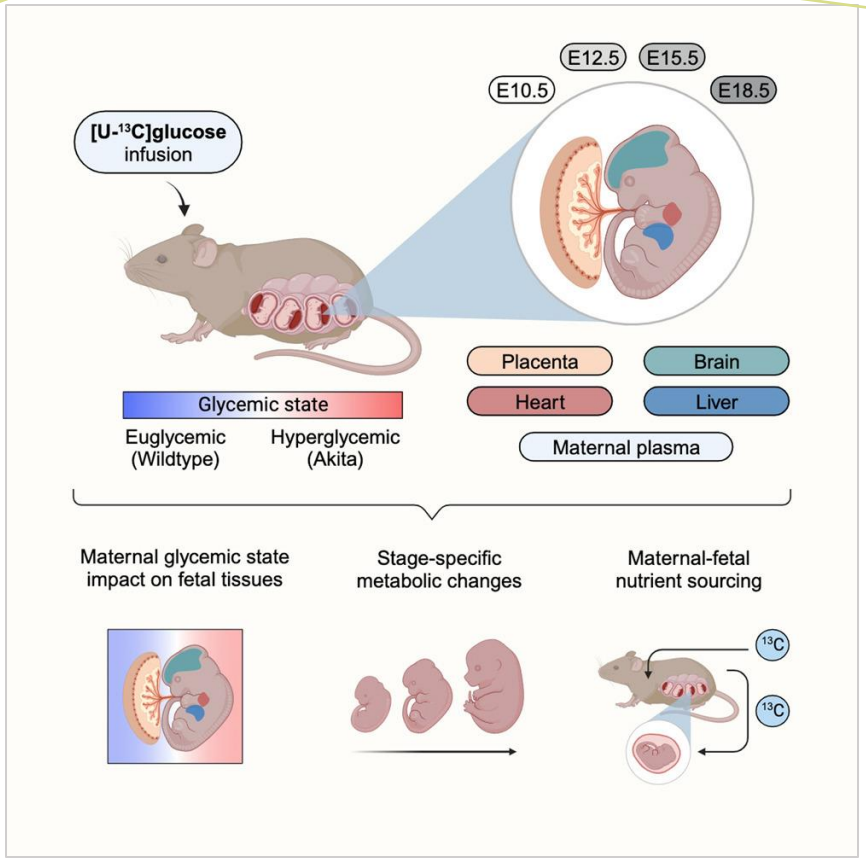
Cesar A. Perez-Ramirez, Haruko Nakano, Richard C. Law, Nedas Matulionis, Jennifer Thompson, Andrew Pfeiffer, Junyoung O. Park, Atsushi Nakano, Heather R. Christofk

Open Access

A descriptive atlas of murine metabolism *in utero* during mid-to-late gestation in normal and diabetic pregnancy reveals the impact of maternal hyperglycemia on fetal tissues. ^{13}C-glucose tracing highlights differences in fetal tissue nutrient sourcing in diabetic pregnancies.

書誌情報

メタ情報：論文のまとめテキスト

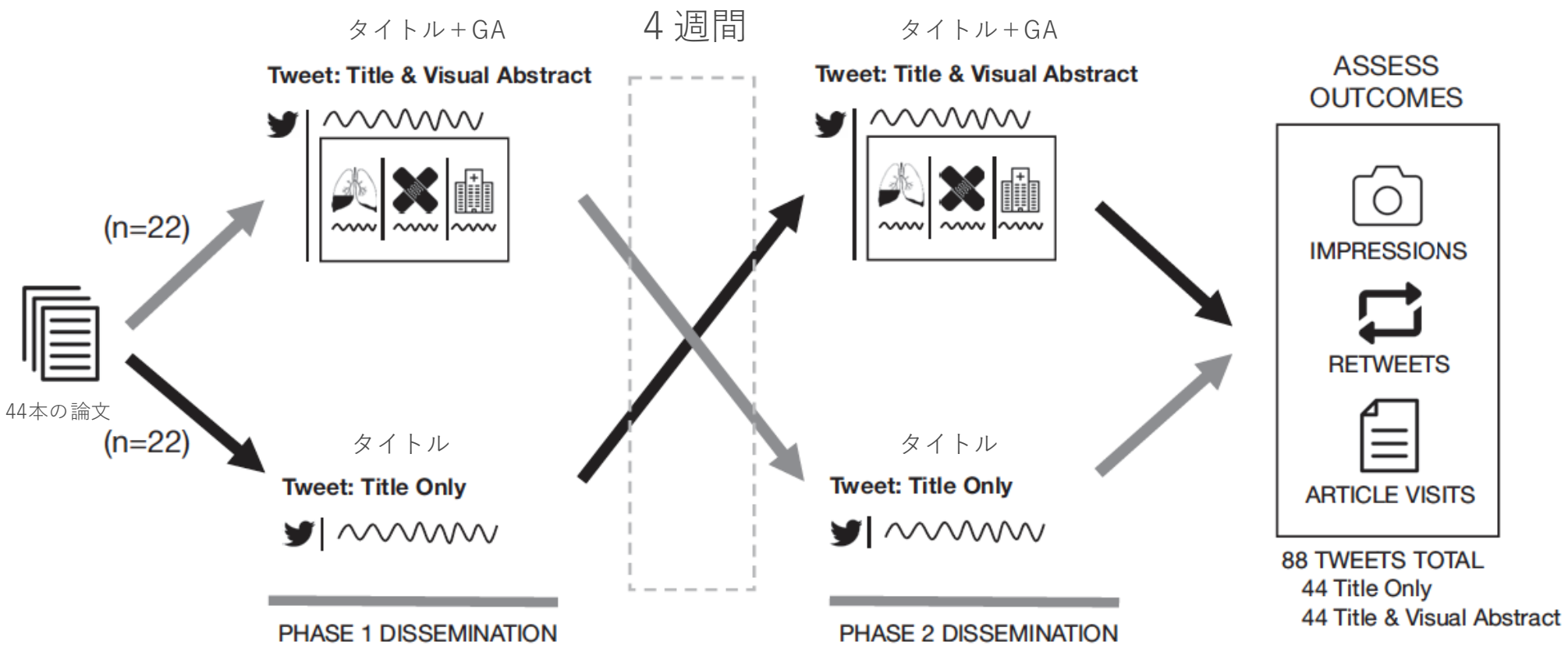


グラフィカルアブストラクトにより、
テキストよりも多くの情報を
短時間で届けることができる。

読者の理解を促し、
より幅広い読者を獲得することができる

Perez-ramirez, C. A. et al. (2024). Atlas of Fetal Metabolism during Mid-to-Late Gestation and Diabetic Pregnancy. *Cell*. https://doi.org/https://doi.org/10.1016/j.cell.2023.11.011

グラフィカルアブストラクトの効果



タイトル＋GA

閲覧数
7.7 倍

シェア数
8.4 倍

ジャーナル
ウェブサイト訪問数
2.7 倍

Figure 2. Study Design. Prospective, case-control crossover study to evaluate the impact of visual abstracts on Twitter.

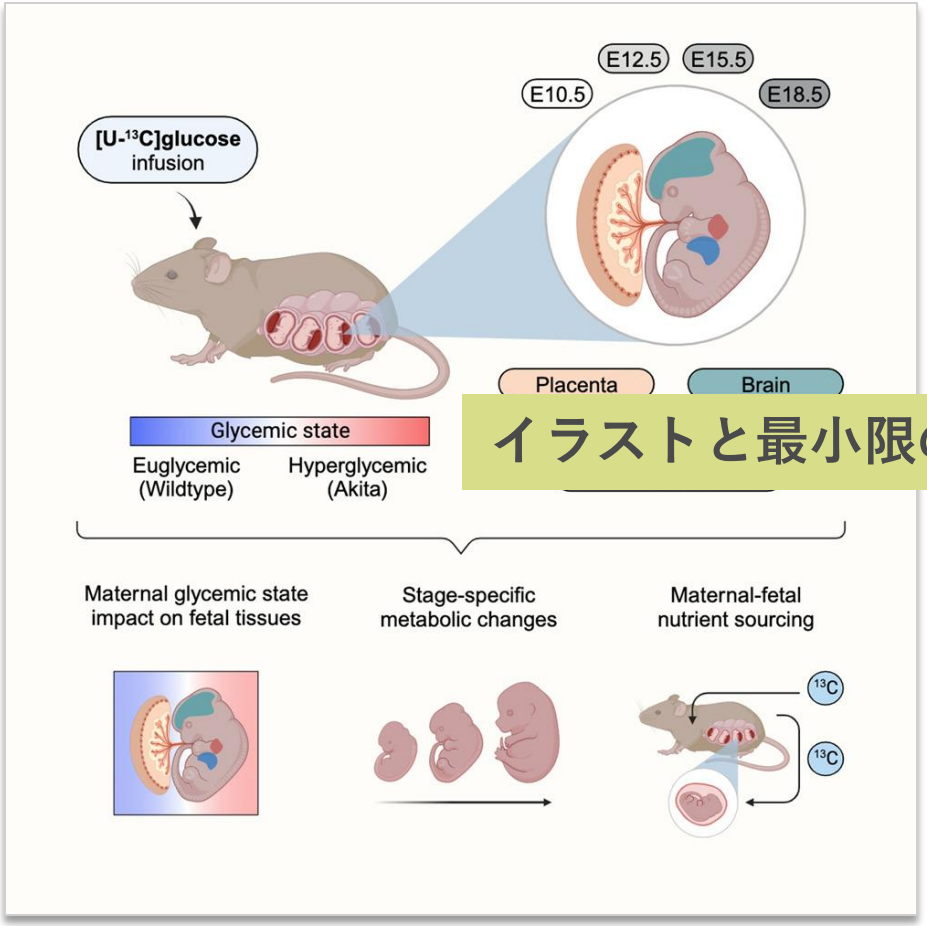
Ibrahim, A. M. et al. (2017). Visual Abstracts to Disseminate Research on Social Media. *Annals of Surgery*.
https://doi.org/10.1097/SLA.0000000000002277

様々なグラフィカルアブストラクト

サイズや形など統一したものはない

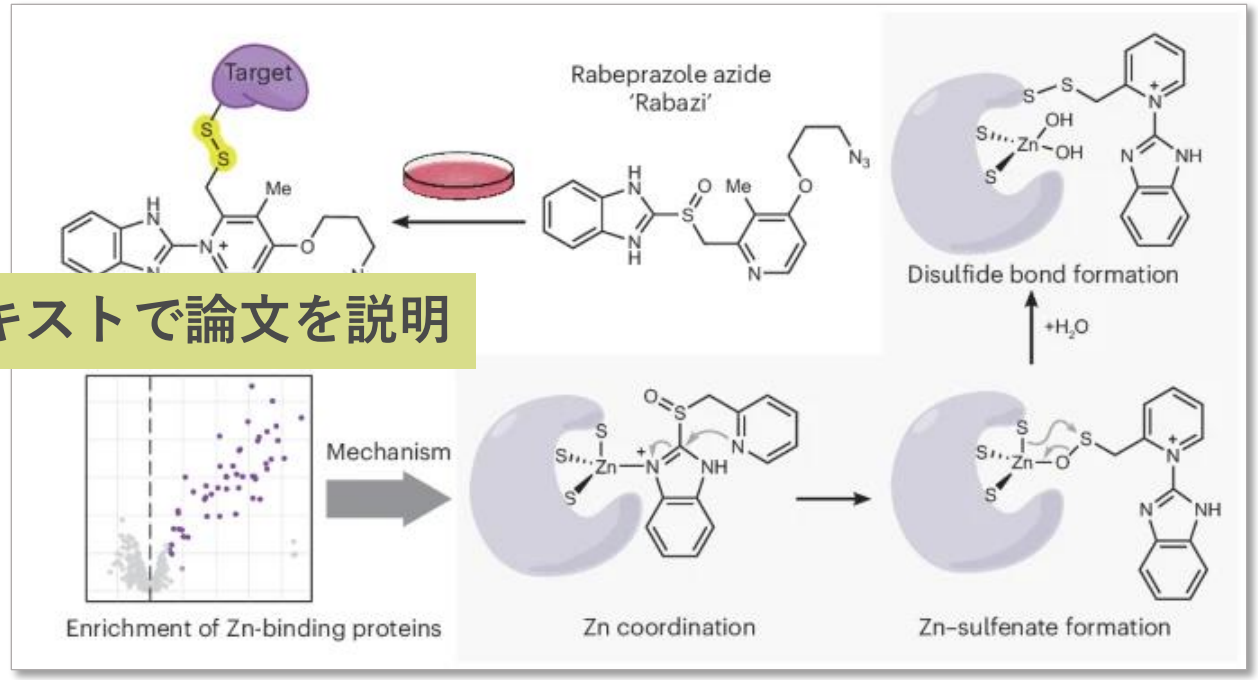
出版社によって規定が決まっている

Cell Press



Perez-ramirez, C. A. et al. (2024). Atlas of Fetal Metabolism during Mid-to-Late Gestation and Diabetic Pregnancy. *Cell*. https://doi.org/https://doi.org/10.1016/j.cell.2023.11.011

Springer Nature



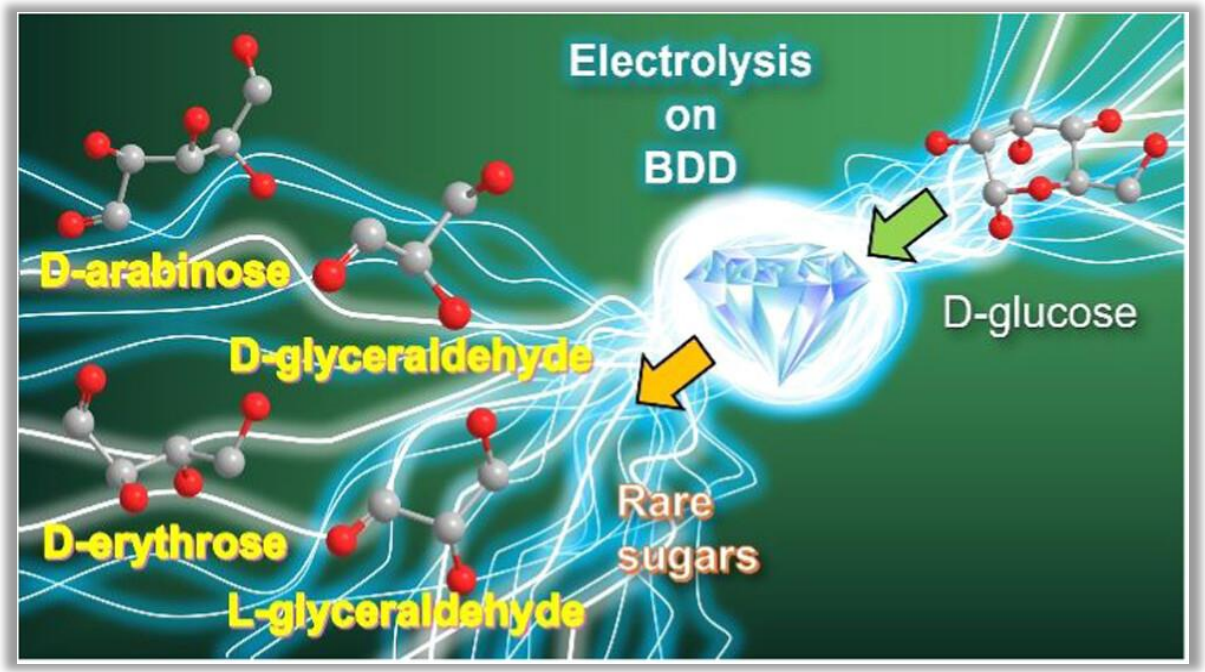
Marker. T. et al. (2025). Site-specific activation of the proton pump inhibitor rabeprazole by tetrathiolate zinc centres. *Nature Chemistry*. https://doi.org/10.1038/s41557-025-01745-8

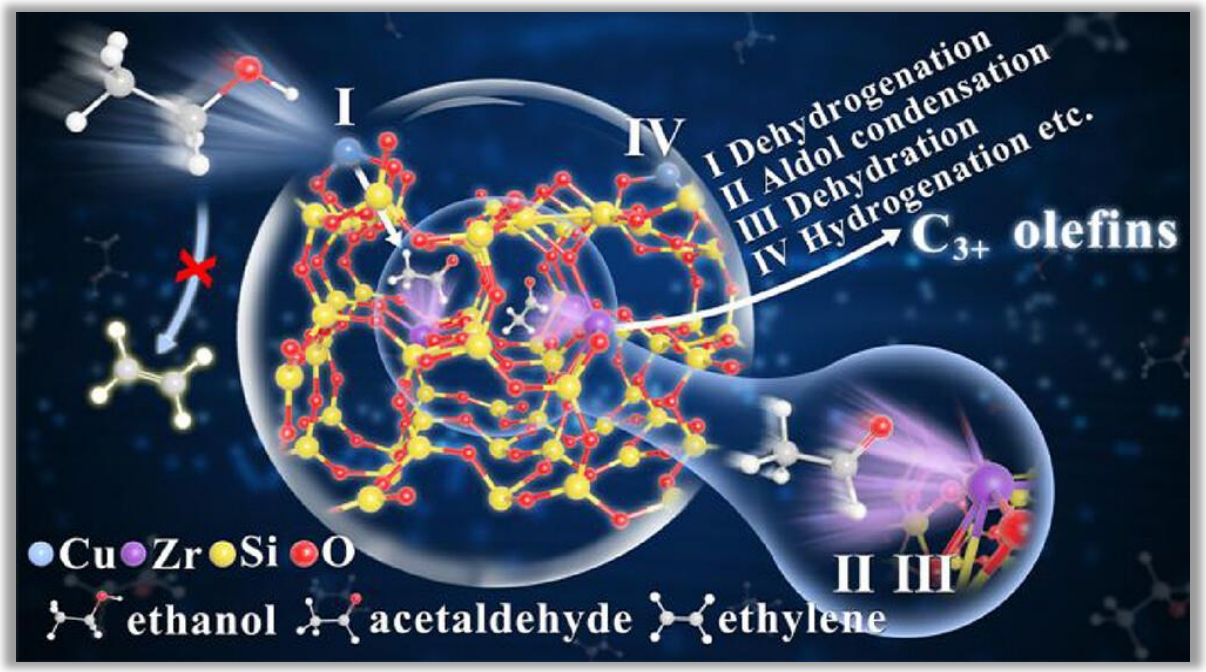
イラストと最小限のテキストで論文を説明

化学では3Dも多用される

The Journal of
American Society of Chemistry

化学構造式やタンパク質の構造解析など、3Dで表示する分野も多い



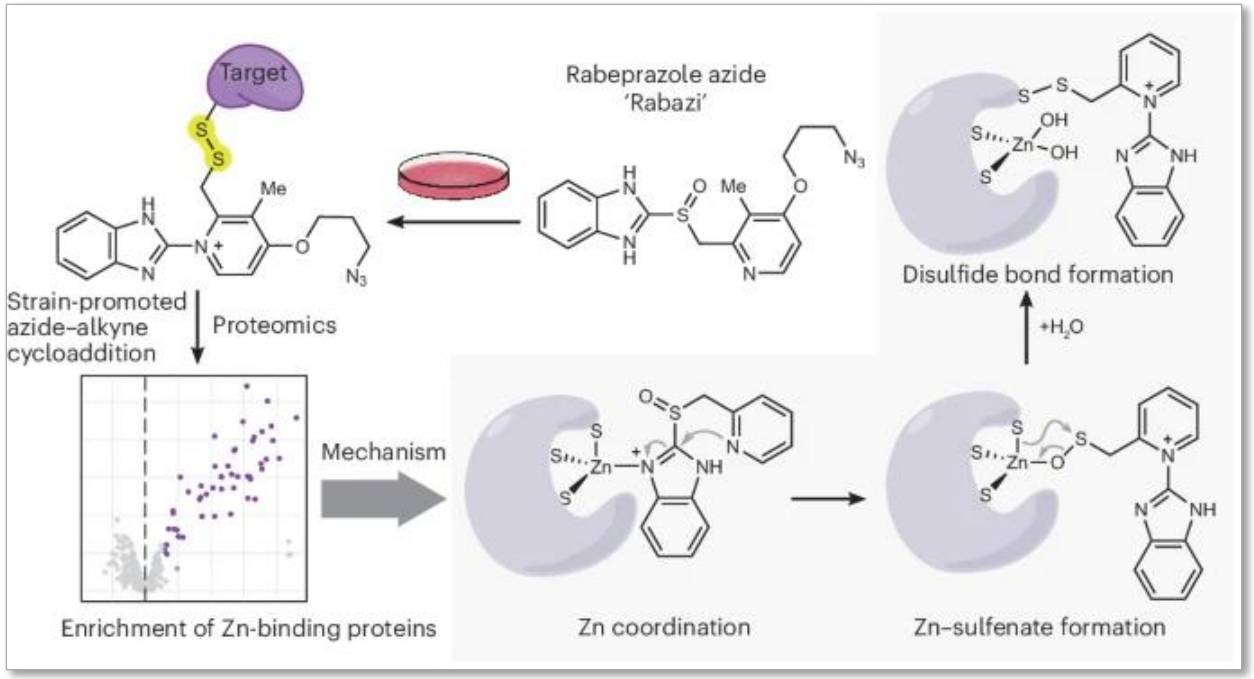


Kawakatsu.K. et al. (2025). Generation of Rare Sugars by Electrochemical Oxidation of D-Glucose Using Boron-Doped Diamond Electrode. *J. of American Society of Chemistry*. https://pubs.acs.org/doi/10.1021/jacs.4c17553

Yang. J. et al. (2025). Spatially Aligned Binary Single-Site Catalyst on Defective SiO_2 for Cascading Reactions. *J. of American Society of Chemistry*. https://pubs.acs.org/doi/ 10.1021/jacs.5c06007

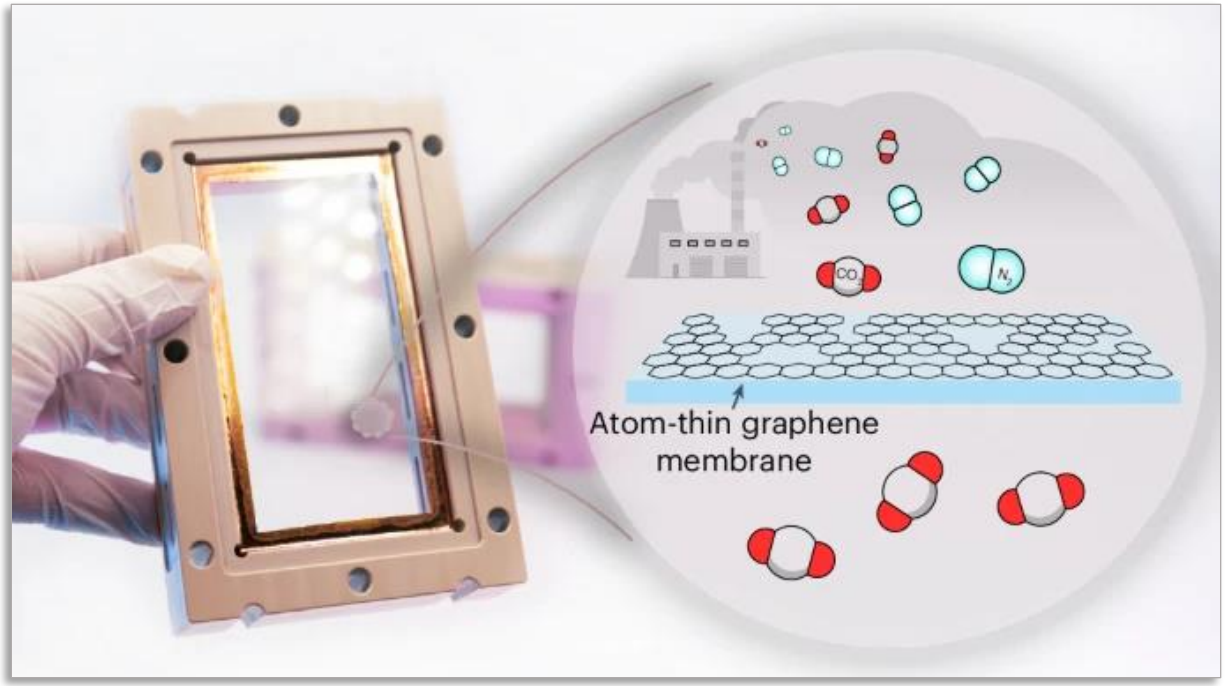
基礎研究と応用研究（化学/生命科学）

Nature chemistry



Marker. T. et al. (2025). Site-specific activation of the proton pump inhibitor rabeprazole by tetrathiolate zinc centres. *Nature Chemistry*. https://doi.org/10.1038/s41557-025-01745-8

Nature Chemical Engineering



Hao. J. et al. (2025). Scalable synthesis of CO_2-selective porous single-layer graphene membranes. *Nature Chemical engineering*. https://doi.org/10.1038/s44286-025-00203-z

基礎研究では、研究の成果や開発した手法

Findings/Methods

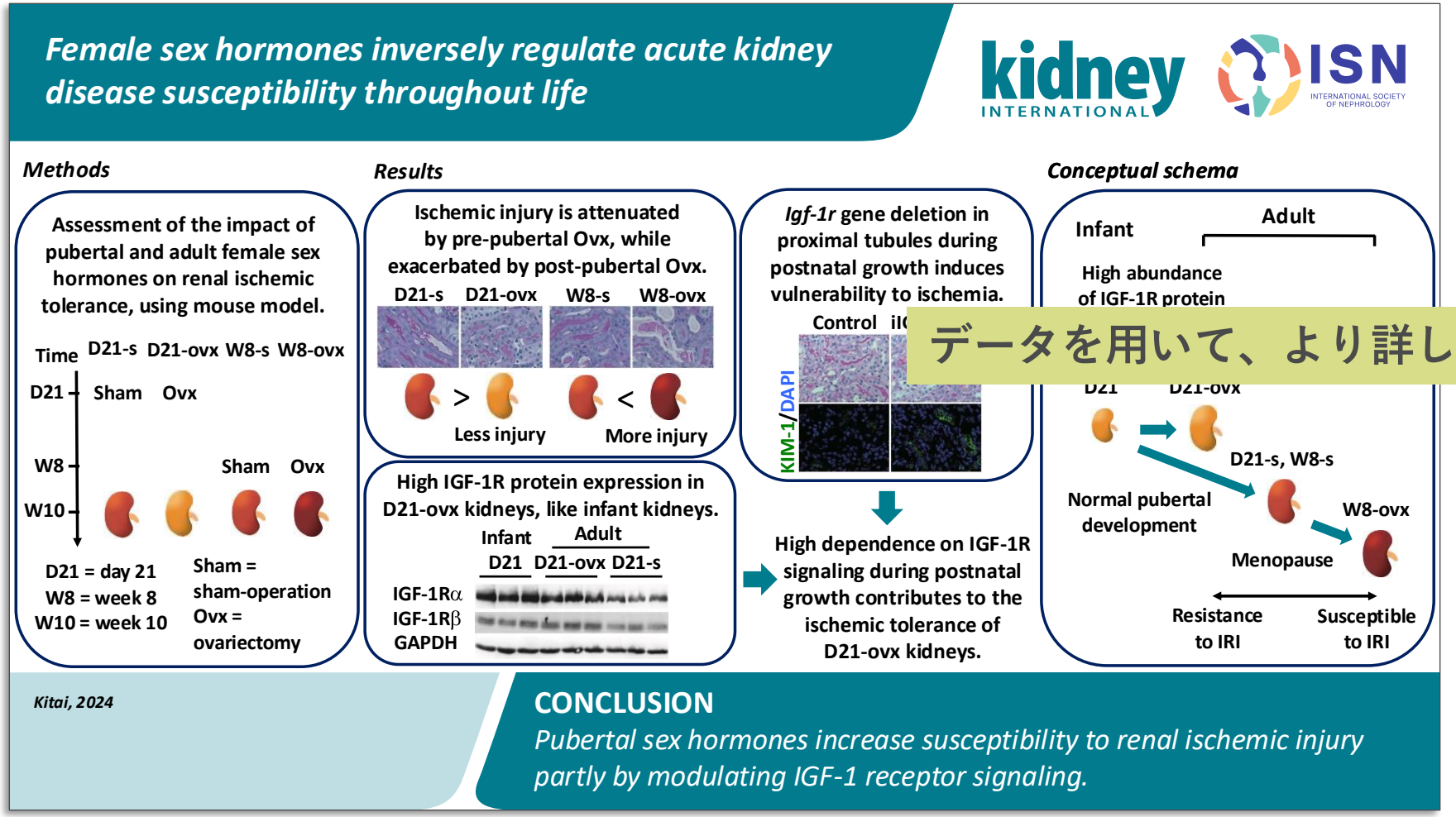
応用研究では、技術の使われた未来

Implications

医学系：臨床系のジャーナルは情報が多い

医学専門誌では、
Visual abstractと呼ばれる

Kidney International



データを用いて、より詳しく論文を説明

Kitai, Y. et al. (2024). Female sex hormones inversely regulate acute kidney disease susceptibility throughout life. *Kidney intl.* https://doi.org/10.1016/j.kint.2024.08.034

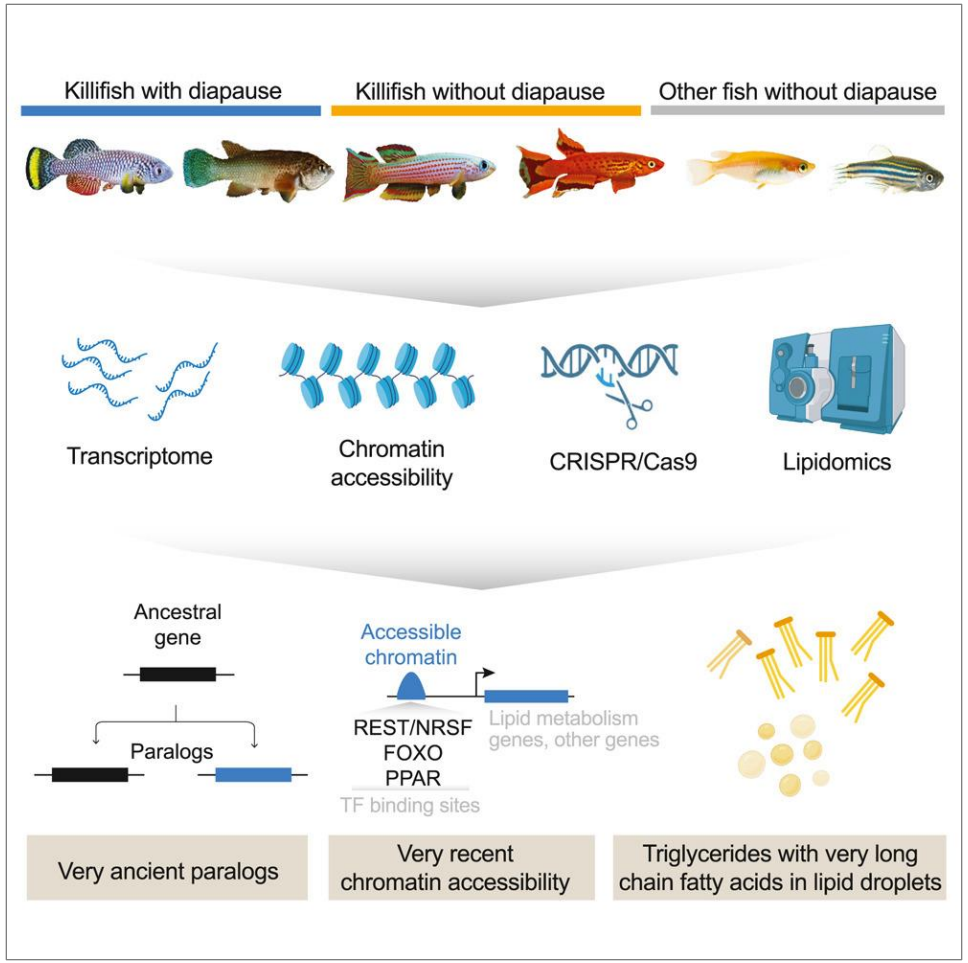
制作を始める前に考えるべきことと

制作フロー

実際に例を見ている（レイアウトからアイデアを）

手法

例）フロー図
斬新な手法や新しい手法など



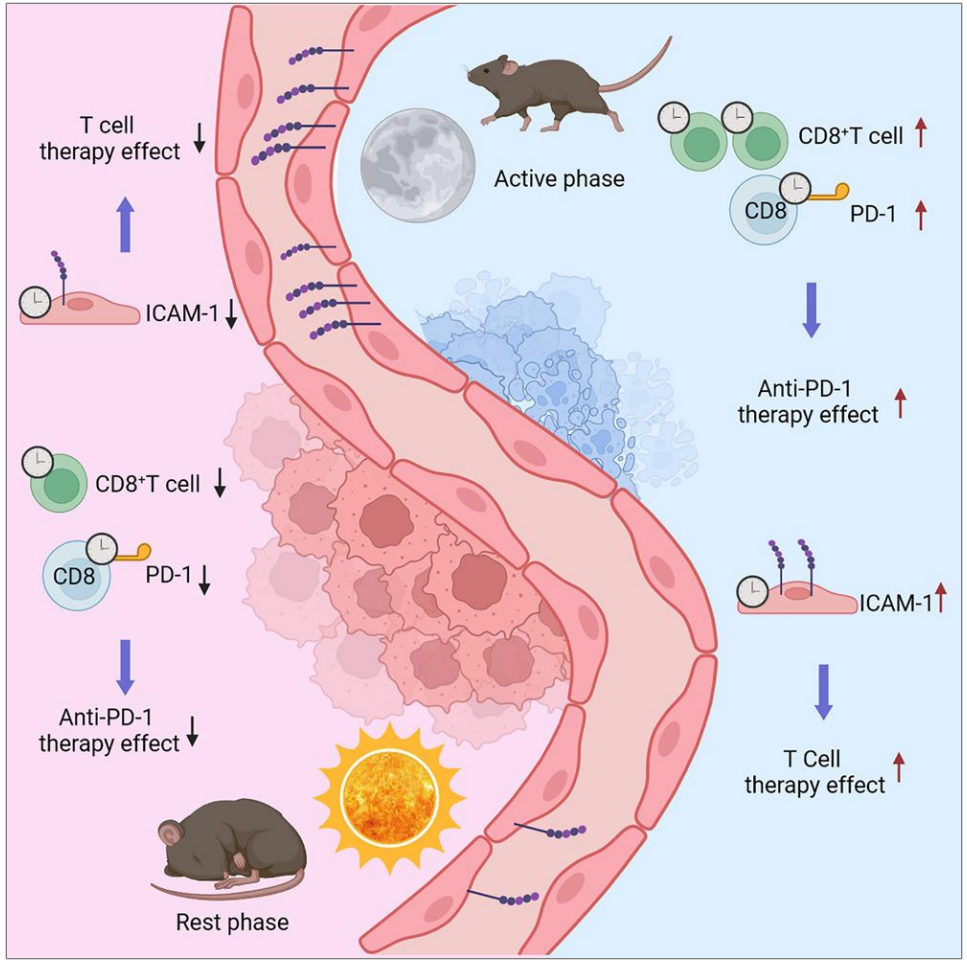
サンプル → 解析法 → データ

昼/
睡眠時

結果

例）対比図・シグナル図
思いがけない結果、新しい知見

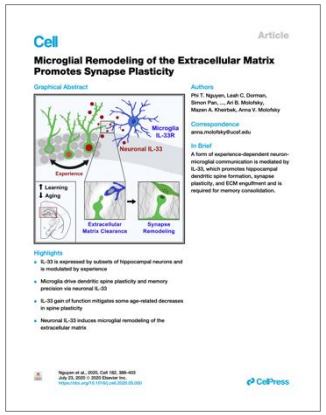
夜/
覚醒時



Singh, P. P. et al. (2024). Evolution of Diapause in the African Turquoise Killifish by Remodeling the Ancient Gene Regulatory Landscape. *Cell*. https://doi.org/10.1016/j.cell.2024.04.048

Wang, C. (2024). Circadian tumor infiltration and function of CD8+ T cells dictate immunotherapy efficacy. *Cell*. https://doi.org/10.1016/j.cell.2024.04.015

図解化する**キーメッセージ**を**1つ**決める


Cell

Article

Microglial Remodeling of the Extracellular Matrix Promotes Synapse Plasticity

Graphical Abstract

Authors

Phi T. Nguyen, Leah C. Dorman, Simon Pan, ..., Ari B. Molofsky, Mazen A. Kheirbek, Anna V. Molofsky

Correspondence

anna.molofsky@ucsf.edu

In Brief

A form of experience-dependent neuron-microglial communication is mediated by IL-33, which promotes hippocampal dendritic spine formation, synapse plasticity, and ECM engulfment and is required for memory consolidation.

Highlights

- IL-33 is expressed by subsets of hippocampal neurons and is modulated by experience
- Microglia drive dendritic spine plasticity and memory precision via neuronal IL-33
- IL-33 gain of function mitigates some age-related decreases in spine plasticity
- Neuronal IL-33 induces microglial remodeling of the extracellular matrix

CellPress

論文の全てを
図解化することはできない！

↓

図解化するキーメッセージを1つ決める

アブストラクトを有効活用する

おすすめ

*アブストラクト: 150 – 200 wordsの論文の概要

Synapse remodeling is essential to encode experiences into neuronal circuits. H[課題] molecular interaction between neurons and microglia that drives experience-dependent synapse remo[課題]ocampus. We find that the cytokine interleukin-33 (IL-33) is expressed by adult hippocampal neurons in an experience-dependent manner and defines a neuronal subset primed for synaptic plasticity. Loss of neuronal IL-33 or the microglial IL-33 receptor leads to impaired spine plasticity, reduced newborn neuron integration, and diminished precision of remote fear memories. Memory precision and neuronal IL-33 are decreased in aged mice, and IL-33 gain of function mitigates age-related decreases in spine plasticity. We find that neuronal IL-33 instructs microglial engulfment of the extracellular matrix (ECM) and that its loss leads to impaired ECM engulfment and a concomitant accumulation of ECM proteins in contact with synapses. These data define a cellular mechanism through which microglia regulate experience-dependent[結果]mory consolidation.

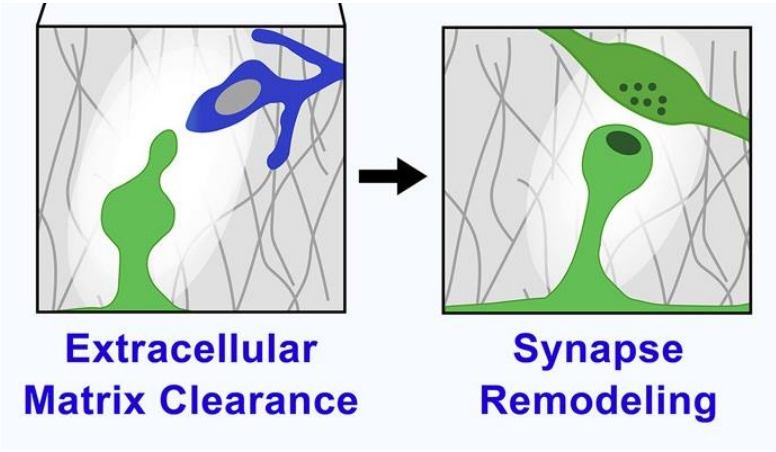
結果
（キーメッセージ）

新しい記憶（シナプス）はどうやって形成されるか

予想 ↙ ✕ ミクログリアが不要なシナプスを除去

思いがけない結果 ↘ ○ ミクログリアが必要なシナプスをサポート

結果

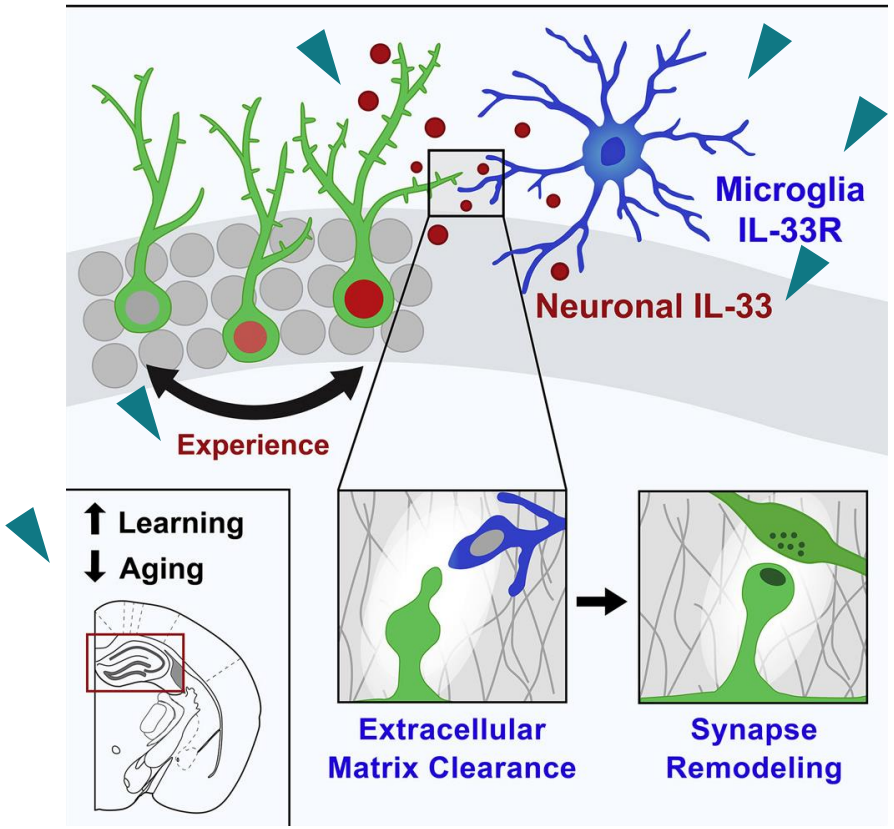


アブストラクトをもとに情報を足していく

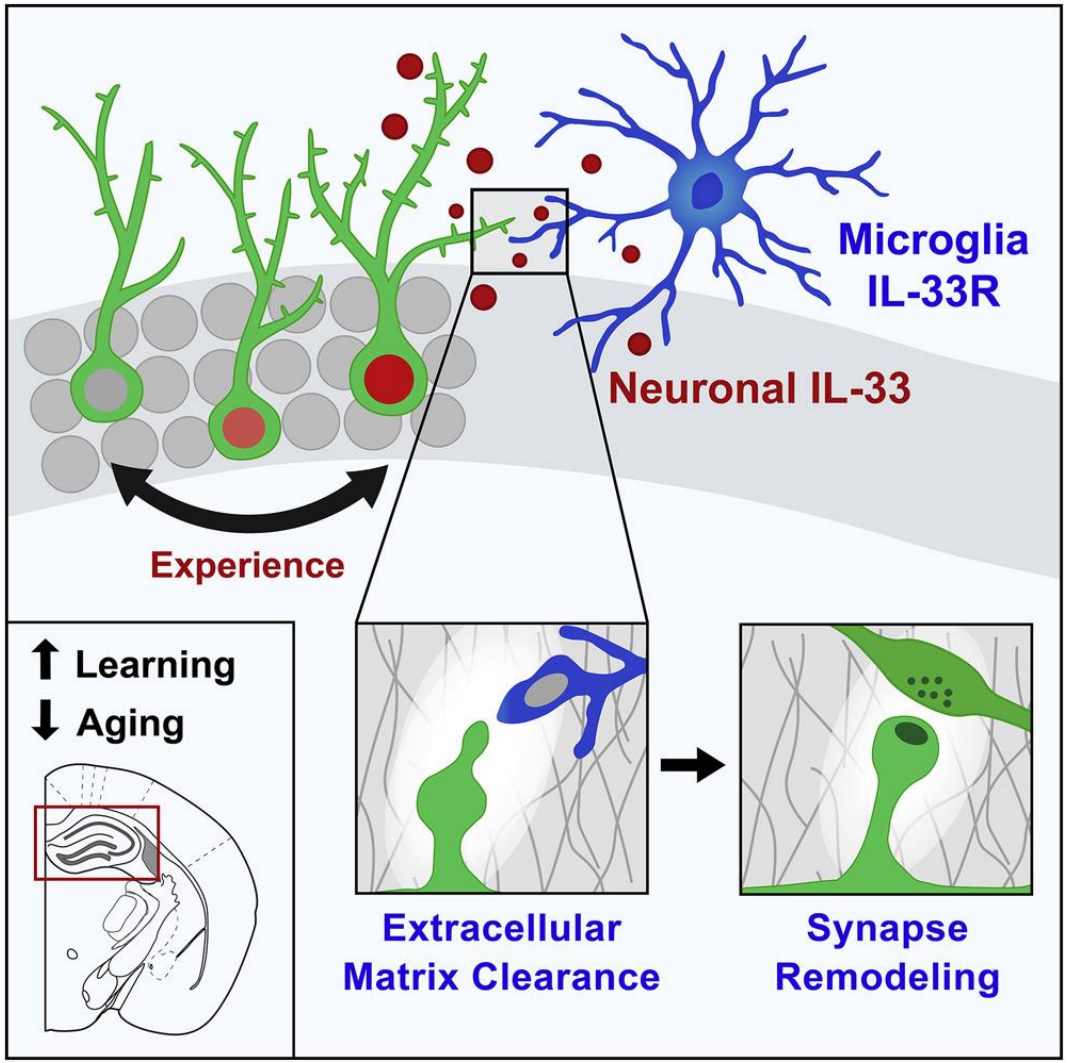
アブストラクトを有効活用！！

読者の理解を助ける**情報**を加えていく→

Synapse remodeling is essential to encode experiences into neuronal circuits. Here, we define a molecular interaction between neurons and microglia that drives experience-dependent synapse remodeling in the hippocampus. We find that the cytokine interleukin-33 (IL-33) is expressed by adult hippocampal neurons in an experience-dependent manner and defines a neuronal subset primed for synaptic plasticity. Loss of neuronal IL-33 or the microglial IL-33 receptor leads to impaired spine plasticity, reduced newborn neuron integration, and diminished precision of remote fear memories. Memory precision and neuronal IL-33 are decreased in aged mice, and IL-33 gain of function mitigates age-related decreases in spine plasticity. We find that neuronal IL-33 instructs microglial engulfment of the extracellular matrix (ECM) and that its loss leads to impaired ECM engulfment and a concomitant accumulation of ECM proteins in contact with synapses. These data define a cellular mechanism through which microglia regulate experience-dependent synapse remodeling and promote memory consolidation.



完成！！



制作のポイント

✓ メッセージに合ったレイアウトを探す

投稿先のジャーナルを見て自分の研究にあった
レイアウトや表現方法を探す

✓ キーメッセージを中心に進める

アブストラクトを活用する

論文のキーメッセージを1つに絞る

アブストラクトを目安に情報量を調整する

▶ **よくある良くないパターン。。。**

✓ 情報過多と情報不足

✓ いきなり描き始める

実際の作図のためのツール

科学に特化したツール

https://www.biorender.com/

https://smart.servier.com/

https://togotv.dbcls.jp/pics.html

https://healthicons.org/

https://mindthegraph.com/

https://bioicons.com/

https://reactome.org/icon-lib

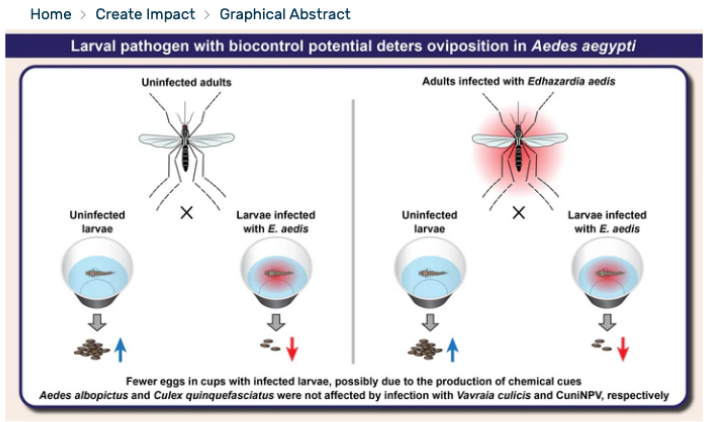
使用時には、利用規約を確認のこと

アウトソースする

出版社の提供する有料サービスを利用する

SPRINGER NATURE
Research Solutions

https://solutions.springernature.com/products/graphical-abstract



Graphical Abstract

$499.00 /

Your name

e.g. 'Muller E', 'Smith WG', 'Li WWT'

Please upload your research article and any supporting documents that will help us create your graphical abstract.

Please click here to upload up to 5 files.

Choose File No file chosen Remove

Let us know any comments, preferences or requirements for your project here. Our team will get in touch with you before we start if we need anything further.

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Features

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- Formatted for easy sharing - based on your preferred channel
- Can be displayed on your Research Square preprint

プロの科学イラストレーターに依頼する

ダウンロードはこちら↑

https://ashbi.kyoto-u.ac.jp/ja/acceleration_program/18544/