



RRIDS: A WAY TO TRACK RESOURCES THROUGH THE LITERATURE

...LIKE ORCID FOR CORE FACILITIES?



Anita Bandrowski, PhD

UCSD Dept. Neurosci

RRIDs lead: <https://scicrunch.org/resources>
COI: Co-Founder and CEO of SciCrunch Inc



RRIDS: A WAY TO TRACK RESOURCES THROUGH THE

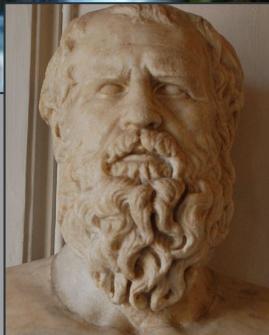
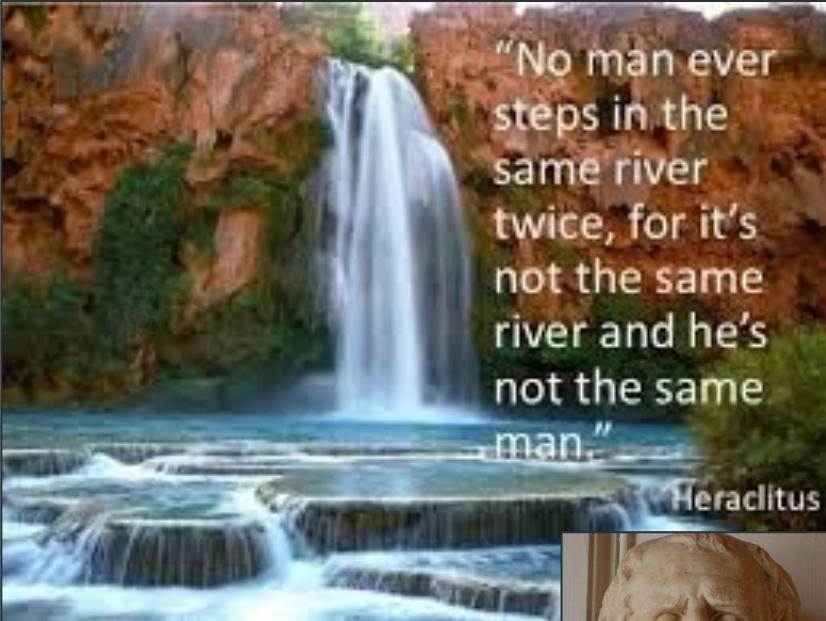
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February 2024!



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WHAT IS THE INTERNET, WHY RRIDS?



- Internet, like a river, is not persistent
- Scientific literature is persistent
- How can we bridge these worlds?
- RRIDs are persistent unique identifiers for things that can change such as key biological resources, cores and Instruments





AMERICAN
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THE AMERICAN SOCIETY FOR MICROBIOLOGY

[mBio.](#) 2019 Jul-Aug; 10(4): e01942-19.

Published online 2019 Aug 27. doi: [10.1128/mBio.01942-19](https://doi.org/10.1128/mBio.01942-19)

PMCID: PMC67

PMID: 314

Interaction of the Ankyrin H Core Effector of *Legionella* with the Host LARP7 Component of the 7SK snRNP Complex

Juanita Von Dwingelo,^{#a} Ivy Yeuk Wah Chung,^{#b} Christopher T. Price,^a Lei Li,^b Snake Jones,^a Miroslaw Cygler,^b and Yousef Abu Kwaik^{§a,d}

Scot P. Ouellette, Editor

Scot P. Ouellette, University of Nebraska Medical Center;

How are key resources described?

Confocal laser scanning microscopy. Processing of transfected cells for confocal microscopy was performed as we described previously. Briefly, monolayers were permeabilized and fixed using 100% methanol held at –20°C for 5 min and were then blocked and labeled with mouse-anti-FLAG (Sigma) (1/200 dilution in 3% bovine serum albumin [BSA]–phosphate-buffered saline [PBS]) and rabbit-anti-Myc (Proteintech) (1/200 dilution in 3% BSA–PBS). Cells were counterlabeled with Alexa Fluor 488 anti-mouse antibody (Invitrogen) (1/4,000 dilution in 3% BSA–PBS), Alexa-Fluor 555 anti-rabbit antibody



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Search term: "mouse anti flag" ×

Product Category: Antibodies ×

Compare Products: Select up to 4 products.

17 matches found for mouse anti flag

[Advanced Search](#) | [Structure Search](#)

ANTI-FLAG® M2 Affinity Gel

1 Product Result | Match Criteria: Property, Description, Product Name

Synonym: Anti-ddddk, Anti-dykdddk, Monoclonal ANTI-FLAG® M2 antibody produced in mouse

Product #	Clonality	Application	Species Reactivity
A2220	M2, monoclonal	IP, affinity chromatography	

No IDentifier
=
Not Findable

for confocal microscopy was utilized and fixed using 100% mouse-anti-FLAG (Sigma) saline [PBS]) and rabbit-anti-Myc (1 with Alexa Fluor 488 anti-Alexa Fluor 555 anti-rabbit antibody

DNA-guided transcription factor cooperativity shapes face and limb mes

Seungsoo
Maram B
Tomek S
Show more



Key resources table

REAGENT or RESOURCE	SOURCE	IDENTIFIER
Antibodies		
Mouse monoclonal TWIST1 (WT, ChIP, CUT&RUN)	Abcam	Cat# ab50887; RRID: AB_883294
Mouse monoclonal ALX4 (WB, CUT&RUN)	Novus Bio	Cat# NBP2-45490; RRID: AB_3073567
Rabbit monoclonal V5 tag (WB, IP)	Abcam	Cat# ab206566; RRID: AB_2819156
Mouse monoclonal Flag tag (WB)	Sigma	Cat# F1804; RRID: AB_262044
Donkey polyclonal anti-rabbit IgG (H+L) HRP (WB)	Jackson Immunoresearch	Cat# 711-035-152; RRID: AB_10015282

Identifier
Links to
information
'raft'



Antibody Name [?](#)

Monoclonal ANTI-FLAG® M2 antibody pre

RRID:[AB_262044](#)



Antibody Information [?](#)

URL: http://antibodyregistry.org/AB_262044

Proper Citation: (Sigma-Aldrich Cat# F1804, RRID:[AB_262044](#))

Target Antigen: FLAG

Host Organism: mouse

Clonality: monoclonal

Comments: Applications: immunoblotting, immunoprecipitation, immunohistochemistry, i

Info: Independent validation by the NYU Lagone was performed for: IHC. This antibody w

[...\[more\]](#)

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Graca Marques J, et al. (2024) The Chromatin Remodeler CHD4 Sustains Ewing



Ratings and Alerts [?](#)

[Report Information](#)

- ENCODE PROJECT External validation for lot: SLBK1346V is available under
ENCODE ID: ENCAB697XQW - ENCODE
<https://www.encodeproject.org/antibodies/ENCAB697XQW>

No alerts have been found for Monoclonal ANTI-FLAG® M2 antibody produced in mouse.

[View More at BIOMED RESOURCE WATCH](#)

HOW ARE CORES AND INSTRUMENTS ACKNOWLEDGED?



HOW ARE CORES AND INSTRUMENTS ACKNOWLEDGED?

Resource Name  

Nonhuman Primate Reagent Resource  

RRID:SCR_012986   Login to claim ownership

Materials and Methods 

Animal inoculation and cART treatment

Eight Indian-origin adult rhesus macaques, housed according to the standards of the American Association for Accreditation of Laboratory Animal Care, were inoculated with SIVmac251 (20ng SIV p27, i.v. supplied by Ron Desrosiers, Harvard Medical School) and depleted of CD8⁺ cells by treatment with the monoclonal anti-CD8 antibody cM-T807 (supplied by Keith Reimann, National Cell Culture Center) on 6, 8, and 12 days post-inoculation (dpi) as previously described to accelerate disease progression ([Ratai et al., 2010](#); [Schmitz et al., 1999](#); [Williams et al., 2005](#)). Four of the monkeys also received cART consisting of daily Racivir (RCV, 10mg/kg, supplied by Raymond Schinazi) and (R)-9-(2-phosphonylmethoxypropyl) adenine (PMPA, 20 mg/kg, Gilead Sciences, Foster City, CA), nucleoside and nucleotide analogs, respectively, neither of which penetrates the CNS ([Haworth et al., 1998](#); [Schinazi et al., 1992](#)) ([Table 1](#)). The drugs were given orally for 4 weeks beginning on 28 dpi. Terminal CSF samples were analyzed for the presence of RCV metabolites to test for CNS penetration of this drug ([Williams et al., 2005](#)).

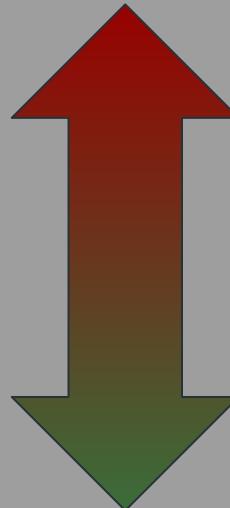
Reagent ID & former core director acknowledged;

Core name was never National Cell Culture Center, director changed 6 years ago; reagent in freezer for 20 year

HOW ARE CORES AND INSTRUMENTS ACKNOWLEDGED?

- Cores can be acknowledged by:

- Name of staff member
- Core PI name
- Name of core
- URL
- Grant #
- RRID



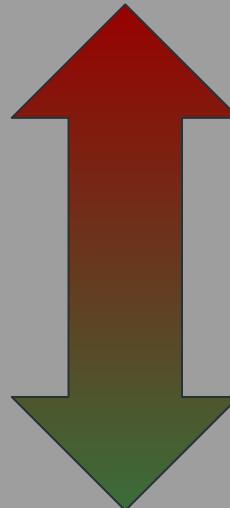
Less reliable

More reliable

HOW ARE CORES AND INSTRUMENTS ACKNOWLEDGED?

- Cores can be acknowledged by:

- Name of staff member
- Core PI name
- Name of core
- URL
- Grant #
- RRID



More time

Less time

ADVICE FROM YOUR FRIENDLY NEIGHBORHOOD LIBRARIANS: USE RRIDS!

COMMENTARY

DOI: dx.doi.org/10.5195/jmla.2024.1887

Research networking and the role of the medical librarian

Robyn Reed, AHIP; Matthew J. Eyer; Megan M. Young; Sarah K. Bronson

See end of article for authors' affiliations.

Medical librarians work collaboratively across institutions. The expertise of medical librarians can provide key expertise in the implementation of Research Information Management Systems (RIMS). At Penn State, the RIMS implementation team included marketing staff from the College of Medicine and librarians from the Health Sciences Library who expanded their own RIMS systems, the CoM and the Health Sciences Library RIMS instances. The goal of this commentary is to encourage the use of RRIDs at Penn State to address questions related to research data sharing and to demonstrate how RRIDs can be used by researchers from other institutions.

“...The efforts of the CoM RIMS team collaborating with the director of the biomedical core facilities have improved internal return-on-investment analyses while publicly demonstrating applications from research core usage on the RIMS. As uptake of RRID usage increases, reporting on the impact of individual core facilities may be simplified to searches employing only RRIDs.”

Keywords: Research networking; collaboration; biomedical research

Strain Detail Sheet



Strain Name: STOCK Tg(Sox9-EGFP)EB209Gsat/MmuCD
Stock Number: 011019-UCD
Citation ID: RRID:MMRRC_011019-UCD
Major Collection: GENSAT

[COPY RRID CITATION TO CLIPBOARD](#)


RRIDs are reflected at many databases and catalogs

These plasmids were created by your colleague in the article in which the plasmids were described, and will be useful in future publications.

For your **Materials & Methods** section:

CelTag Plasmid was a gift from David Engelke (RRID:Addgene_66562)

Purified anti-AKT1 Antibody

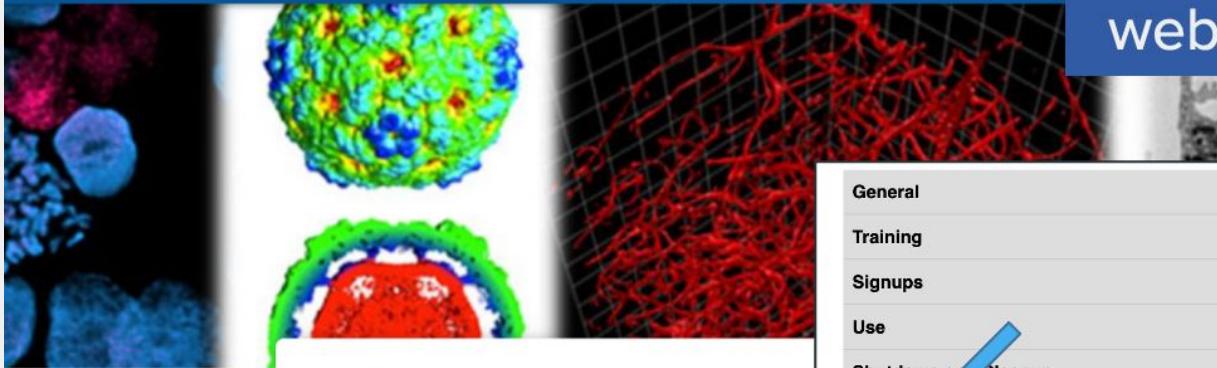
RRID AB_2566355 (BioLegend Cat. No. 680302)

Antigen Details

Structure 480 amino acids with a predicted molecular weight of approximately 53 kDa.
Distribution Cytoplasm, nucleus, cell membrane, phosphorylation on T cell localization to the cell membrane where it is targeted for

Cellosaurus 1-5c-4 (CVCL_2260)

Cell line name	1-5c-4
Synonyms	Clone 1-5c-4; Clone 1-5c-4 WKD of Chang Conjunctival Cell Line
Accession	CVCL_2260
Resource Identification Initiative	To cite this cell line use: 1-5c-4 (RRID:CVCL_2260)
Comments	Problematic cell line: Contaminated. Shown to be a HeLa cell line. Transformant: NCBI_TaxID: 333761; Human papillomavirus: Omics: Transcriptome analysis.
Disease	Human papillomavirus-related endocervical adenocarcinoma
Species of origin	Homo sapiens (Human) (NCBI Taxonomy: 9606)



General Information and Resources >

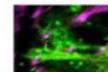
Animal-Based Studies >

Biochemical and Biophysical Studies >

Advanced Light Microscopy

The Advanced Light Microscopy core at Penn State College of Medicine provides training and resources for fluorescence imaging of molecules, cells, and tissues.

The **Confocal, Super-Resolution STED and Deconvolution microscopes** are useful in 3D imaging of any biological systems and spatial



Core directors use RRIDs in their email signature

Importantly, RRIDs are reflected on the Core webpages: Citation info

General >

Training >

Signups >

Use >

Shutdown and Cleanup >

Citation >

All publications, press releases or other documents that result from the utilization of any Penn State College of Medicine Institutional Research Resources including funding, travel, services or support are required to credit the core facility and associated RRID for each core used. Use of an instrument in the Advanced Light Microscopy core should include the following:

"The Advanced Light Microscopy core ([RRID:SCR_022526](#)) services and instruments used in this project were funded, in part, by the Pennsylvania State University College of Medicine via the Office of the Vice Dean of Research and Graduate Students and the Pennsylvania Department of Health using Tobacco Settlement Funds (CURE). The content is solely the responsibility of the authors and does not necessarily represent the official views of the University or College of Medicine. The Pennsylvania Department of Health specifically disclaims responsibility for any analyses, interpretations or conclusions."

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eLIFE

About Careers Labs

July 2016

eLife joins the Resource Identification Initiative

Thursday, July 7, 2016 - 09:05

To promote reproducibility in scientific research, eLIFE is joining the Resource Identification Initiative (#RII), a community-led project that originated from the International Committee of Medical Journal Editors (ICMJE) and the International Society of Traumatic Stress Studies (ISTSS). The RII aims to improve reproducibility in biomedical and behavioral research by encouraging the use of unique Research Resource Identifiers (RRIDs) to describe the research resources within their manuscripts.

Resources used in experimental work are often important to replicating the results. That is why we have joined the Resource Identification Initiative (#RII), a community-led project that originated from the International Committee of Medical Journal Editors (ICMJE) and the International Society of Traumatic Stress Studies (ISTSS). The RII aims to improve reproducibility in biomedical and behavioral research by encouraging the use of unique Research Resource Identifiers (RRIDs) to describe the research resources within their manuscripts.

RRIDs must be machine-readable, free to generate, and available through publishers and journals.



ENDOCRINE SOCIETY

Who does this?

2000+ journals have RRID containing papers
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Aug 2016

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Antibody Table

It is the policy of *Endocrinology* to require authors using antibodies for immunohistochemistry, immunocytochemistry, western blots, immunoblots, immunoneutralization, or related methodology, to submit an Antibody table. This table should be numbered to indicate its position in the sequence of tables in the article (e.g. Table 1). In the Methods section, provide positive or negative controls, antibody validation, lot number, and references. Beginning in September 2016, authors should also ascertain whether the Research Resource Identifier (RRID) by consulting the [Antibody Registry](#) and provide the RRID if available in the Methods section and/or the Antibody table of the manuscript.

CellPress

Explore

Oct 2016

Cell Press STAR Methods

Cell Press is pleased to introduce a new format for reporting methods that replaces the traditional Methods format. Structured, Transparent, Accessible Reporting (STAR) will be introduced in Cell and Cell Press journals. The format will improve rigor and reproducibility.

METHODS AND RESOURCES

KEY RESOURCES TABLE

Request or Resource	Source	Identifier
Antibodies		
Rabbit monoclonal anti-ERK1/2	Bethyl	N/A
Cell Signaling		Cat #2708, RRID: AB_1234567
Rabbit monoclonal anti-S6K1	Cell Signaling	Cat #5364, RRID: AB_3876154
Cell Signaling		Cat #9234, RRID: AB_7538001
Rabbit monoclonal anti-phospho-S6K1 (Thr388)	Cell Signaling	Cat #9206, RRID: AB_393173
Sigma (gift prior to commercial release)	Sigma	N/A
Sigma		Cat #F1804, RRID: AB_244605
Commercially available		
EASY ECLIPSE 355 Protein Labeling Mix	Perkin-Elmer	NEIG72014MC
SUBSET™ assay	Karafutti	N/A
Proteinase P1 Kit	Intronetics	#AM200
Deposited Data		
Raw and analyzed data	this paper	GEO: GSE63473
Human reference genome NCBI build 37 (GRCh37)		http://www.ncbi.nlm.nih.gov/projects/genomestore/by/organism/human/
Bacterial strain: Crlbc-TIR	Invitrogen	12291-016
Cell line: U2-OS-PerfLuciferase	John Hogenesch lab	N/A
Cell line: 293 T cells	ATCC	cat # CRL-11288
Cell line: Phoenix Retinal		
Experimental Models: Organism/Strain	National Gene Vector Biorepository	N/A
Mouse line: C57BL/6	Jackson Labs	001334, RRID: IMSR_JAKX002633
Mouse line: B6D2F1-Antennapedia (B6D2F1)	Jackson Labs	006407, RRID: IMSR_C57BL_006407
Human DNA		
IMAI-LDNA	SINEG1 Archive	Clone #0091651
pIMAI-HCV_xb	Addgene	Plasmid #17510
AAV2/5-hSyn-GCaMP6s-WPRE	Chen et al., 2013	N/A
iND_Pcr2 luciferase lentiviral vector	Tyler Jacks' lab	N/A
Other Reagents		

See Table S1

See Table S1

See Table S1

JNeurosci
THE JOURNAL OF NEUROSCIENCE

An Official Journal of

SOCIETY FOR
NEUROSCIENCE

RRIDs

Feb 2014

JNeurosci encourages use of Research Resource Identifiers (RRIDs) through the Resource Identification Initiative. This initiative addresses concerns of reproducibility by providing unique identifiers for resources used in the course of scientific research. RRIDs can be used to link readers to external resources and enable search engines to return all papers that cite a specific resource.

To find an RRID: visit <https://scicrunch.org/resources> and enter your search term(s).

- Antibodies: searching for the catalog number usually narrows the search to only a few relevant results.
- Cell Lines: searching for the catalog number of an established cell line is usually best, searching for RRIDs.
- Organisms: you can include PubMed IDs (PMIDs) in your search or filter your search results by PMID.
- Software tools: usually the name of the tool (MATLAB or ImageJ) or the institution where it is housed.

Search help is available at: rii-help@scicrunch.org.

Once you have located an RRID, insert "RRID:" plus the identifier in the appropriate location in the manuscript.

- Antibodies: "Sections were stained with a rabbit polyclonal antibody against ERK1 (Abgent Cat# A-2001)." Subjects include the following cell lines: GLC-Cat# 2002024/1; S295; HeLa; S2; RRID:CVCL_0001.

eNeuro

an open-access journal of

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PDF Information for Authors

Jun 2016

eNeuro, an open-access journal from the Society for Neuroscience, publishes high-quality, peer-reviewed research focused solely on the field of neuroscience. *eNeuro* embodies a scientific vision that offers a new experience for authors and readers, all in support of SIN's advance understanding of the brain and nervous system.

RRID AUTHOR'S WORKFLOW

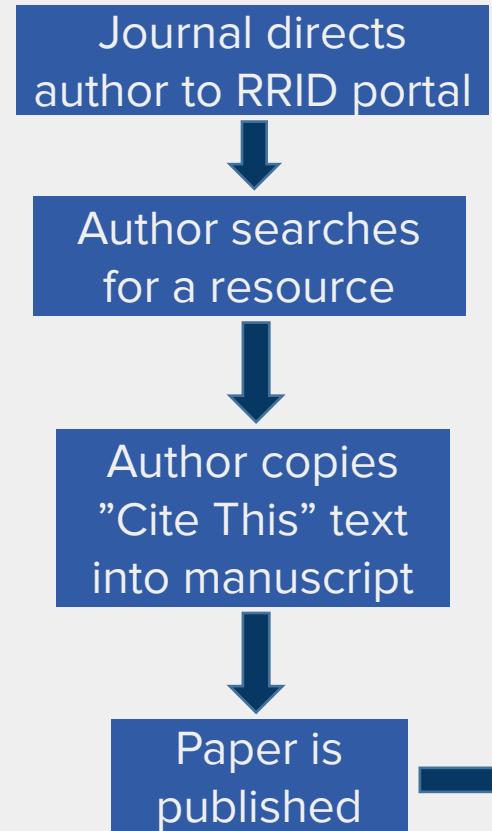
<https://scicrunch.org/resources>
or rrid.site

SEARCH FOR RESOURCES

The screenshot shows a search results page for 'vermont core'. At the top, there's a search bar with 'vermont core' and a magnifying glass icon. Below the search bar, the URL 'http://www.uvm.edu/~vacc/' is shown. The main content area lists 'Vermont University Vermont Advanced Computing Core Facility' with a checkbox. Below it, 'Cite this' and 'URL' information are provided. A red oval highlights the 'Advanced Computing Core Facility, RRID:SCR_017762' link. At the bottom, there are links for 'SciCrunch: Registry (9)', 'Cite This!', and 'View Source Information'.

RRID portal includes:

- Antibodies >2.5M
- Organisms >800K (~30 centers)
- Cell lines >150K
- Plasmids (Addgene) >100K
- Stats tools, Core fac. etc 23K



RRID:IMSR_JAX:000664

About 901 results (0.07 sec)

Did you mean: RRID:IMSR JAX:000664

Natural whisker-guided behavior by head

NJ Sofroniew, JD Cohen, AK Lee... - Journal of ..., 2014 - Soc Neuroscience

★ 99 Cited by 83 Related articles All 11 versions Web of Science: 52

$\alpha 2 \delta-4$ is required for the molecular and structural organization of rod a photoreceptor synapses

V Kerov, JG Laird, M Joiner, S Knecht... - Journal of ..., 2018 - Soc Neuroscience

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[HTML] Inhibition of Dpp8/9 activates the Nlrp1b inflammasome

MC Okondo, SD Rao, CY Taabazuing, AJ Chui... - Cell chemical ..., 2018 - Elsevier

... BALB/cJ, The Jackson Laboratory, Cat#000651; RRID:IMSR_JAX:000651.

C57BL/6J, The Jackson Laboratory, Cat#000664; RRID:IMSR_JAX:000664.

NOD/ShiLtJ, The Jackson Laboratory, Cat#001976; RRID:IMSR_JAX:001976 ...

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S1PR3 mediates itch and pain via distinct TRP channel-dependent pa

RZ Hill, T Morita, RB Brem... - Journal of Neuroscience, 2018 - Soc Neuroscience

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Paper becomes data

EACH RRID HAS A DEDICATED WEBPAGE

N2T.NET/RRID:SCR_022526



Resource Name

Penn State Hershey College of Medicine Light Microscopy Imaging Core Facility

RRID:SCR_022526

Resource Information

URL: <https://research.med.psu.edu/core-facilities/light-microscopy>

Proper Citation: Penn State Hershey College of Medicine Light Microscopy Imaging Core Facility (RRID:SCR_022526)

Description: Provides consultation and training in ultra high resolution imaging of cells and tissues in fixed or live states. Provides expertise in quantitative image analysis and consultations on microscopy related research projects.

Abbreviations: Penn State COM

Synonyms: The Light Microscopy Imaging Core (Penn State COM)

Resource Type: service resource, core facility, access service resource

Keywords: USEdit, ABRF, ultra high resolution imaging of cells and tissues, fixed or live

PDF REPORT HOW TO CITE

Basic metadata: other IDs old/alt URLs

Usage and Citation Metrics

We found 10 mentions in open access literature.

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Most recent articles:

Hattori T, et al. (2024) ER stress elicits non-canonical CASP8 (caspase 8) activation on autophagosomal membranes to induce apoptosis. Autophagy, 20(2), 349. (PMID:37733908)

Kazza SA, et al. (2024) Phosphorylation of aryl hydrocarbon receptor interacting protein by TBK1 negatively regulates IRF7 and the type I interferon response. The Journal of biological chemistry, 300(1), 105525. (PMID:38043800)

Lambert GS, et al. (2024) Comparative analysis of retroviral Gag-host cell interactions: focus on the nuclear interactome. bioRxiv : the preprint server for biology. (PMID:3823900)

Check [Google Scholar](#) for all resource mentions.

Ratings and Alerts

No rating or validation information has been found for Penn State Hershey College of Medicine Light Microscopy Imaging Core Facility.

Data and Source Information

Source: SciCrunch Registry

Contact help

Relationships to other resources
Institutions ROR!

Citations of resource

Ratings and alerts

Well used helpdesk



Total cores:

2,855

Last 4 years:

1,727

1.2 per day

Cited cores: 605



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Hattori T, et al. (2024) ER stress elicits non-canonical CASP8 (caspase 8) activation on autophagosomal membranes to induce apoptosis. *Journal of Cell Biology*, 223 (1), e202309223. (PMID:37182226)

-- ; **e** ([RRID:SCR_022526](#)) and Genome Sciences Core (RRID:SCR) [[Verified RRID](#)

Kazzaz SA, et al. (2024) Phosphorylation of aryl hydrocarbon receptor interacting protein by TBK1 negatively regulates IRF6 signaling. *Journal of Biological Chemistry*, 300 (1), 105525. (PMID:38043800)

-- ; Advanced Light Microscopy Core ([RRID:SCR_022526](#)), Flow Cytometry Core (RRID:SCR) [[Verified RRID](#)

Lambert GS, et al. (2024) Comparative analysis of retroviral Gag-host cell interactions: focus on the nuclear interactome. *BioRxiv*, 2024.01.01.592222.

-- ; core ([RRID:SCR_022526](#)) services and instruments used [[Verified RRID](#)

Ye Y, et al. (2024) Identification of membrane curvature sensing motifs essential for VPS37A phagophore recruitment and autophagy. *Journal of Cell Biology*, 223 (1), e202309223. (PMID:38491121)

-- image quantification. The NMR ([RRID:SCR_022526](#)) and Advanced Light Microscopy [[Verified RRID](#)

Saha K, et al. (2023) Alpha-tocopherylquinone-mediated activation of the Aryl Hydrocarbon Receptor regulates the production of proinflammation. *Mucosal Immunology*, 16 (6), 826. (PMID:37716509)

--

Kaddis Maldonado R, et al. (2023) The Rous sarcoma virus Gag Polyprotein Forms Biomolecular Condensates Driven by Interactions with the Host Cell. *Journal of Cell Biology*, 223 (16), 168182. (PMID:37328094)

-- Advanced Light Microscopy Core ([RRID:SCR_022526](#)). The Advanced Light Microscopy [[Verified RRID](#)

Pandya Shesh B, et al. (2023) Uptake of H-ferritin by Glioblastoma stem cells and its impact on their invasion capacity. *Journal of Cell Biology*, 223 (16), 168182. (PMID:37328094)

-- Advanced Light Microscopy core ([RRID:SCR_022526](#)) services and instruments used [[Verified RRID](#)

Chang J, et al. (2023) HIV-1 Gag co-localizes with euchromatin histone marks at the nuclear periphery. *Journal of Virology*, 97 (16), e00162-23. (PMID:37328094)

-- Advanced Light Microscopy Core ([RRID:SCR_022526](#)), which is funded, in part, by [[Verified RRID](#)



RRIDs are
visible in
papers,
sometimes
linked;
Brings trust in
citations

INSTRUMENTS HAVE MORE CONSISTENT TEXT MINING RESULTS

All Mentions (1085 mentions) [Download Mentions] ?

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Page of 11 (1 ~ 100 of 1085)

Huang LC, et al. (2024) BRCA1 and ELK-1 regulate neural progenitor cell fate in the optic tectum in response to visual experience in Academy of Sciences of the United States of America , 121 (3) , e2316542121. ([PMID:38198524](#))
-- ; CSARia II, BD Biosciences, USA; [RRID:SCR_018934](#). [Verified RRID ]

Bennett NK, et al. (2024) Systems-level analyses dissociate genetic regulators of reactive oxygen species and energy production. Proc United States of America , 121 (3) , e2307904121. ([PMID:38207075](#))
-- ; ted on either a [BD FACSARia II \(RRID:SCR_018934\)](#) or a [BD FACSARia Fusion \(facil](#) [Verified RRID ]

Kinoshita S, et al. (2020) [PMID:38380440](#)
-- as perfor

Evans MK, et al. (2020) Ybx1 fine-tunes PRC2 activities to control embryonic brain development. Nature communications , 11 , 1030.
-- After three washes in cold PBS, cells were resuspended in PBS and analyzed by [BD FACSARia](#)™ Fusion.

Adaku N, et al. (2020) [RRID:SCR_018934](#)
-- ; ted on either a

Zhang H, et al. (2020) An IL-27-Driven Transcriptional Network Identifies Regulators of IL-10 Expression across T Helper Cells. *Immunity* , 53 , 1030.
-- For RNA-seq and qPCR analysis of IL-10 producing and non-producing T helper cells, naive CD4+CD45RA+CD62L+ T cells from C57BL/6 mice using [BD FACSARia](#) sorter and were activated with irradiated splenocytes depleted of CD4 T cells (a

Sarrafha L, et al. (2020) [PMID:38380440](#)
-- ; a II Cell

Tanno H, et al. (2020) A facile technology for the high-throughput sequencing of the paired VH:VL and TCRB:TRB genes. *Nature* , 583 , 521.
-- Cells were washed and analyzed with [BD FACSARia](#) and FlowJo v10 software.

Sutton MS, et al. (2020) [PMID:38380440](#)
-- sciences

Xie K, et al. (2020) Activation leads to a significant shift in the intracellular redox homeostasis of neutrophil-like cells. *Redox biology* , 28 , 101344. ([PMID:38380440](#))
-- 2.4 Monoclonal cultures of roGFP2 expressing PLB-985 cells were generated using a fluorescence-activated cell sorter (FACS, [BD FACSARia](#) III, BD Biosciences, Franklin Lakes, USA). Cells were collected in PBS and analyzed with [BD FACSDiva](#) (version 8.0.1, BD, Franklin lakes, USA).

Tsukamoto S, et al. (2020) [PMID:38380440](#)
-- II cell so

Cinque L, et al. (2020) MiT/TFE factors control ER-phagy via transcriptional regulation of FAM134B. *The EMBO journal* , 39 (17) , e105696. ([PMID:32792222](#))
-- Cells were collected in PBS, and the fluorescence was analyzed with [BD FACSARia](#).

Of 2317 instruments 667 have citations;

Did authors use funded instrument?
Core RRID + instrument citation

RRIDS: PIDS FOR KEY BIOLOGICAL RESOURCES

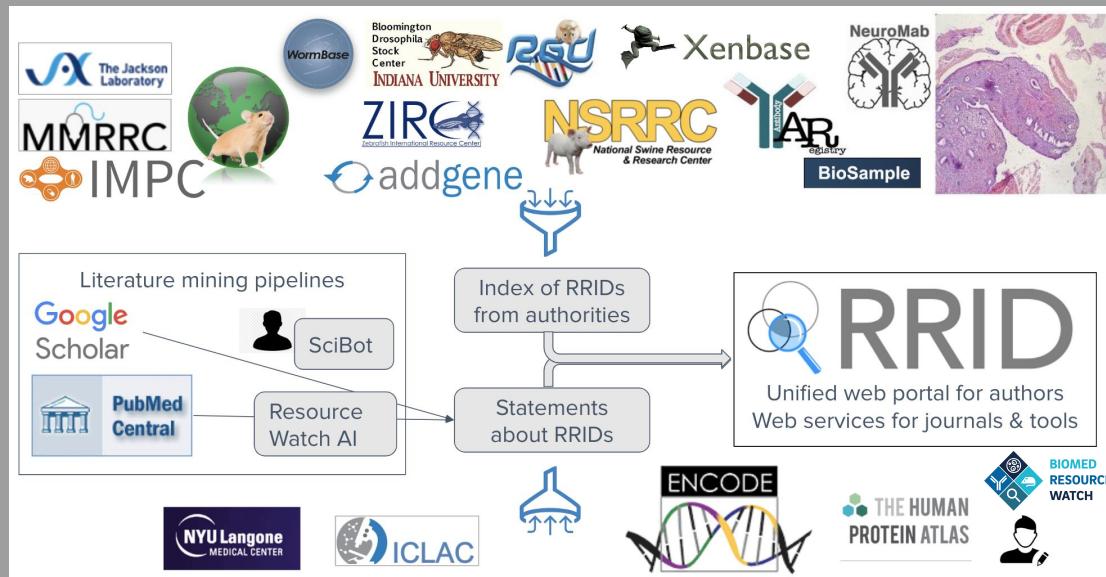
Millipore/Sigma Cat# MAB3026, RRID:AB 2178887 (lot#)
(Company Name) (Catalog number), (RRID Identifier from authority)



What does it do: The Resource Identification Initiative is designed to help researchers sufficiently cite the key resources used to produce the scientific findings reported in the biomedical literature.

What problem does it solve: Resources reported in the biomedical literature often lack sufficient detail to enable reproducibility or reuse. This has been called out as a serious enough problem by the NIH to introduce new guidelines for Rigor and Transparency for almost all awards in starting in May of 2016.

Who are the users: Publishers/journals, research resource companies (producing e.g. antibody, mouse and cell lines)





WHAT IF THERE IS NO RRID FOR YOUR RESOURCE?

<https://scicrunch.org/resources>

Getting Started

The Resource Identification Portal was created in support of the [Resource Id](#) discovery, and reuse. The portal offers a central location for obtaining and exchanging identifiers for referencing a research resource. This portal relies on the good will of the community to contribute their resources to the Registry. For example, the Cellosaurus. These community databases are the source for RRIDs of their types. If you cite it using the RRID, if you created a new resource, we link you to the place where it can be found. Examples are shown below, which are linked to metadata about each resource.

Antibody: [RRID:AB_90755](#)

Plasmid: [RRID:Addgene_44362](#)

Organism: [RRID:MMRRC_026409-UCD](#)

Cell Line: [RRID:CVCL_1074](#)

Tool: [RRID:SCR_003070](#)

Biosamples: [RRID:SAMN19842595](#)

To ensure they are recognizable, unique, and traceable, identifiers are prefixed with the name of the organization that provided it (e.g. "AB" for the Antibody Registry, "CVCL" for the Cell Lines Registry, and "SCR" for the SciCrunch registry of tools).

Can't find your resource?

[Add a Resource](#)

Add a resource

[New Search](#)

[Home](#) / [Tools](#) / [Add a resource](#)

What is a Resource?

RRID contributes to the SciCrunch Registry, the [antibodyregistry.org](#), Cellosaurus database and a large number of model organism databases.

To submit your information for a new research resource, you must first select the type of resource. You will most likely be taken to a site outside of the RRID portal because the RRID is based on identifiers that

Choose a resource type

Resource Type

Select

Antibody



Cell Lines



Core Facility



Organism



Plasmid

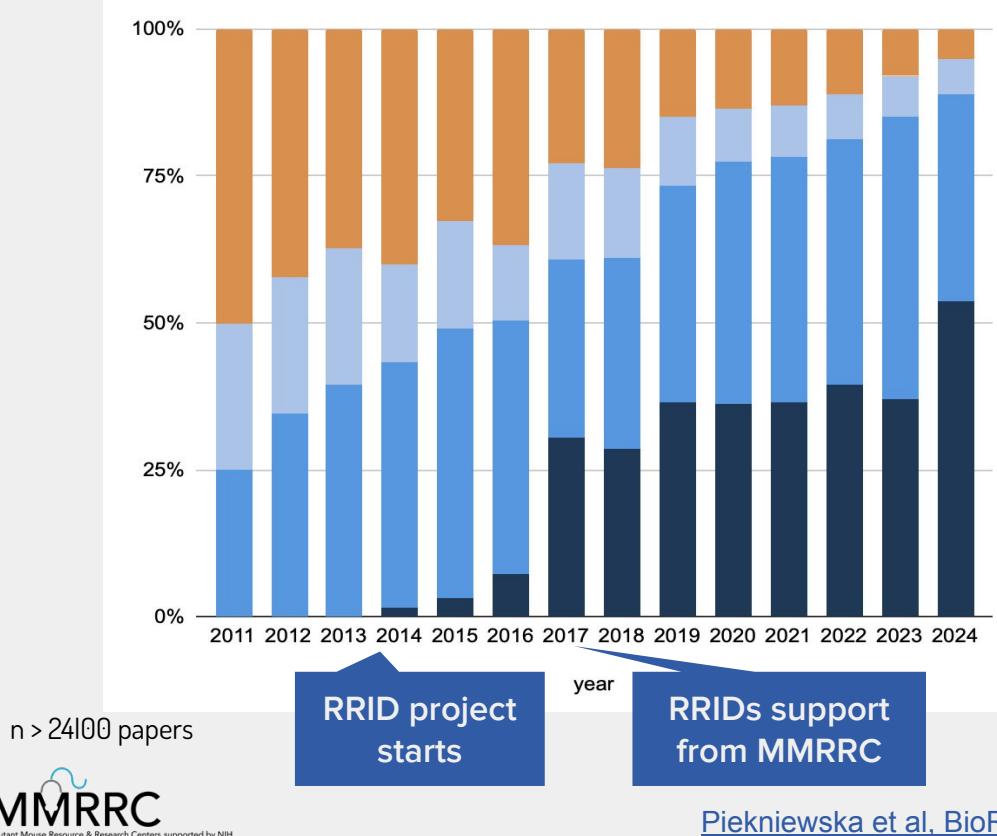


Resource



No need to be
logged in

Percentage of references per category when MMRRC mice were used



Nickname provided, mouse could not be found

Sripada A, et al. (2021) Sprouty2 positively regulates T cell function via inhibition of CSK and LCK kinases. PLoS biology , 19 (3) , e3001063. (PMID:33720000)

-- m The Jackson's Laboratory) and **Spry2f/f** (MMRRC, mutant stock #34840-JAX)

Name provided, RRID found

cells international , 2020 , 8878412. (PMID:32733573)

-- 5xFAD mice (**B6SJL-Tg(APPsweP351-I146L?L286V)675**) were obtained in accordance with the laboratory guidelines.

Catalog number provided

Pan JX, et al. (2021) Osteoblastic Swedish mutant APP expedites brain degeneration in Alzheimer's disease. (PMID:34824365)

-- ed from The Jackson Laboratory (**MMRRC stock #34 840-JAX**)25 weeks old

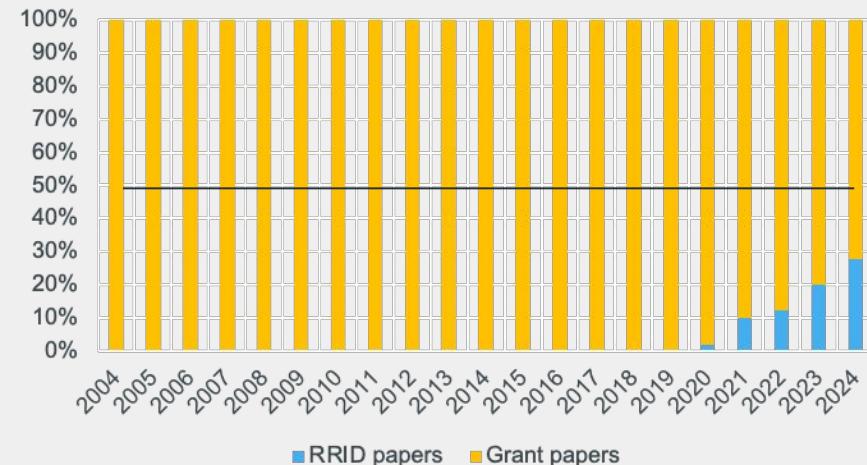
RRID provided

Liu L, et al. (2020) Preparing Viable Hippocampal Slices from Adult 5xFAD Mice. (PMID:32733573)

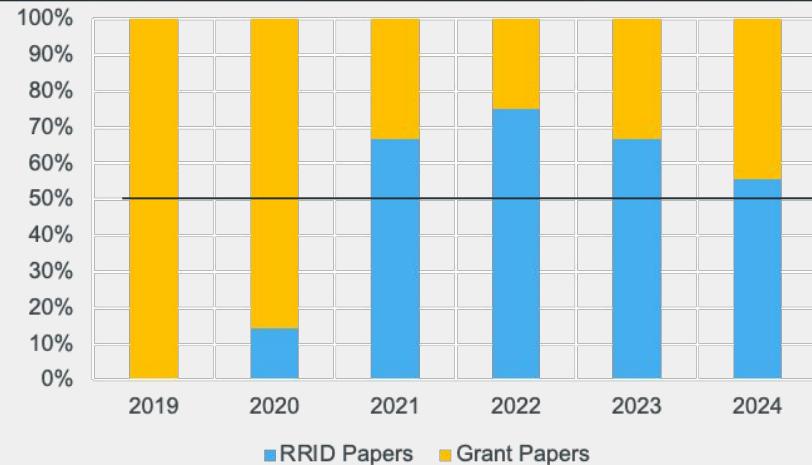
-- xFAD mice (**RRID:MMRRC_034840-JAX**, Jackson Labs) (C57BL/6J background)

HOW MANY RRID CITATIONS DO WE GET FOR CORES?

UNC Microscopy Core Facility



UCSC Microscopy Core Facility



Ideal case for these graphs is 50%



WE WANT YOU!

To put RRIDs into your next paper!

When reviewing ask for RRIDs
Review papers (*and grants*) for methods!

Cores: Register
...and tell us about your good or bad
antibodies or other tools

Journal editors, RRIDs.org has drafts for
your instructions to authors

Comments / Thoughts:
abandrowski@ucsd.edu

Using IDentifiers for resources makes better (reproducible) papers

Resource Identification Portal

Cell Lines

1-5c-4

ON PAGE 1 SHOWING 4 OUT OF 4 RESULTS FROM 1 SOURCES

1-5c-4 cell line, ECACC ↗

http://web.expasy.org/cellosaurus/CVCL_2260 ↗

Cite this ECACC Cat# 88021103, RRID:CVCL_2260

Organism: Homo sapiens

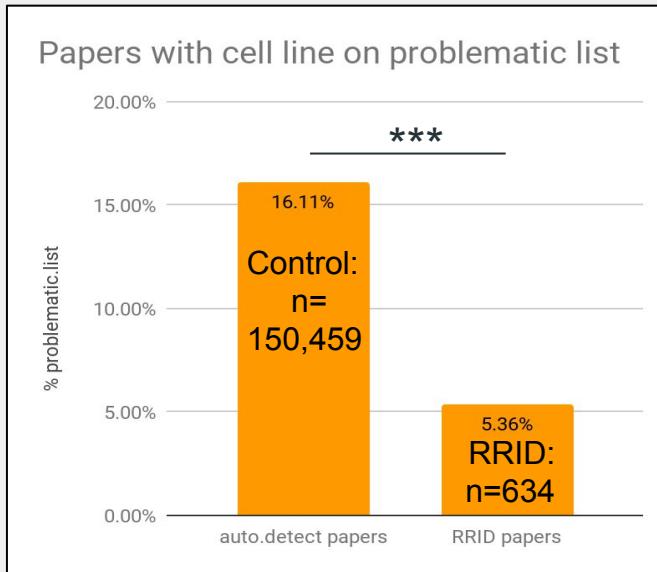
Disease: Cervical adenocarcinoma

Category: Cancer cell line

Comment: Problematic cell line: Contaminated. Shown to be a HeLa derivative

From Current Category

Cellosaurus: Cell Lines (4) | Cite This | View Source Information

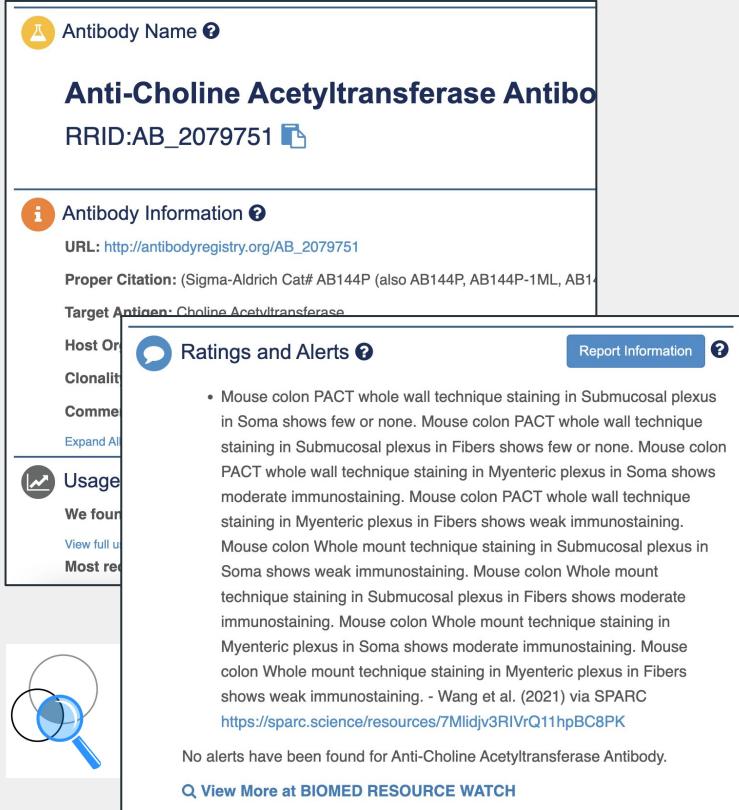


Authors see warning about cell lines = 66% decrease in naughty cell lines

Babic et al, eLife, 2019



Using IDentifiers for resources makes better (reproducible) papers



The screenshot shows a detailed view of an antibody entry. At the top, it says "Antibody Name" with a question mark icon. Below that is the title "Anti-Choline Acetyltransferase Antibody" and its RRID: AB_2079751 with a download icon. A large orange button labeled "Antibody Information" with a question mark icon follows. Underneath, there's a URL link and a proper citation: "(Sigma-Aldrich Cat# AB144P (also AB144P, AB144P-1ML, AB144P-1000ML))". The target antigen is listed as "Choline Acetyltransferase". Below this is a "Ratings and Alerts" section with a blue speech bubble icon and a "Report Information" button. A long text box contains immunostaining information from Wang et al. (2021). On the left sidebar, there are icons for "Usage" (line graph), "We found" (percentage), and "View full usage history" (link). At the bottom, there's a magnifying glass icon and a link to "View More at BIOMED RESOURCE WATCH".

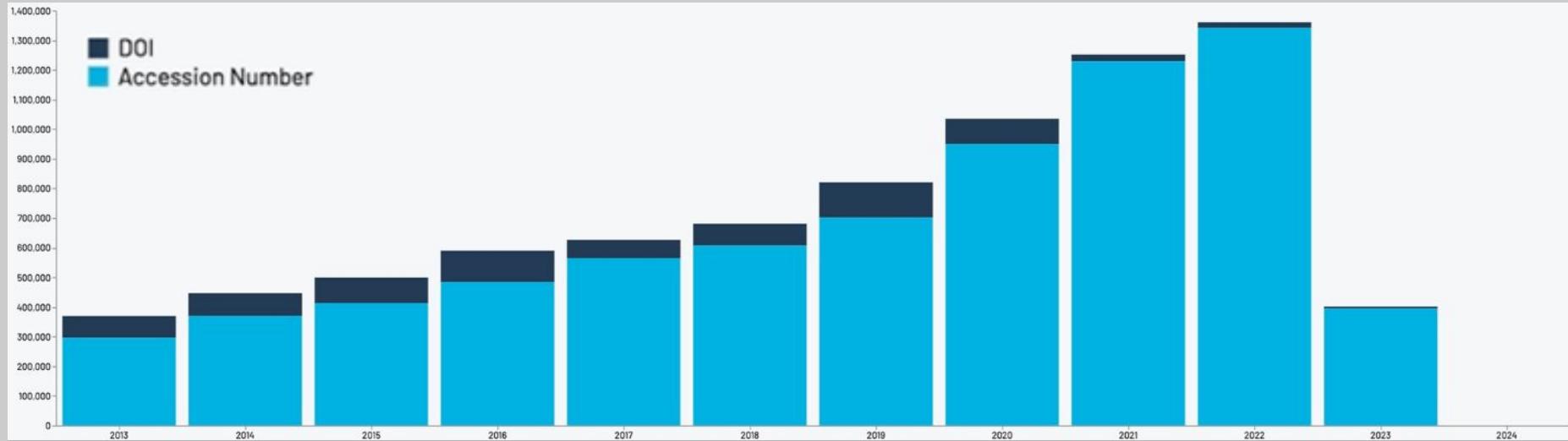
Antibody reports come from:

ENCODE
psyENCODE
YCharOS
Core facilities (10+ universities)

****Software tools** with reported problems

*****Animals** that don't recapitulate a disease

Fig 1. The Data Citation Corpus dashboard.



Puebla I, Ascoli GA, Blume J, Chodacki J, Finnell J, et al. (2024) Ten simple rules for recognizing data and software contributions in hiring, promotion, and tenure. PLOS Computational Biology 20(8): e1012296. <https://doi.org/10.1371/journal.pcbi.1012296>
<https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1012296>

So why is the reagent problem not solved?

Making papers better requires staff time





What does it do: SciScore is an automated and multifaceted tool based on AI and deep learning technology, that evaluates manuscripts for adherence to several key reporting criteria for rigor and reproducibility introduced over the years by funding agencies and journals. Using criteria from various reporting standards (e.g. the NIH, MDAR, and ARRIVE), SciScore generates three reports and a score for every submission.

What problem does it solve: SciScore helps ensure key resources like antibodies, cell lines, and organisms, are described in enough detail (e.g. vendor names, catalogue numbers, RRIDs, etc.), so that other researchers can try to replicate a studies findings.

Who are the users: These materials assist researchers, peer reviewers and editors, in improving the quality and reliability of scientific research by automatically reporting detected criteria of interest for future review.

Funding: SBIR R44MH119094 & sustained by partners

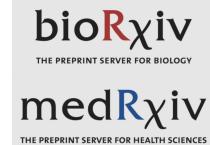
	1	2	3	4	5		1	2	3	4	5
Ethics											
Institutional Review Board Statement	x										
Consent Statement	x										
Institutional Animal Care and Use Committee Statement	x	x									
Field Sample Permit	x										
General Euthanasia and Agent			x								
Study Participation											
Inclusion and Exclusion Criteria	x	x	x	x							
Attrition	x	x		x							
Sex as a biological variable	x	x	x	x							
Subject Demographics											
Age		x	x								
Weight	x										

1. MDAR / 2. ARRIVE / 3. CONSORT / 4. AVMA Guidelines / 5. Landis et al., 2013 (NIH)

Partners



American Heart Association



Rigor & Transparency Index - RTI

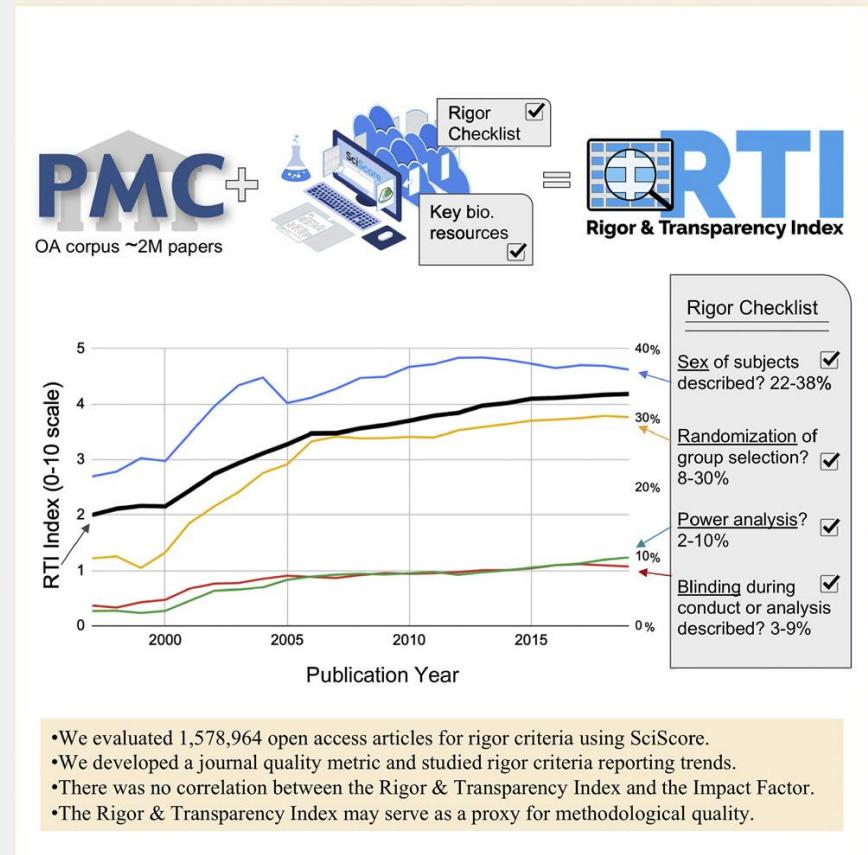
What does it do: The RTI is a new journal metric of quality for assessing biological and medical science methods, based on the degree to which journal articles were addressing reproducibility guidelines.

What problem does it solve: How can we score the science published in journals itself as opposed to counting tweets or citations?

What are the users: It can be used as a selection criterion for authors who want to be associated with more reproducible journals, or by editors to assess the reproducibility of their journal, or by publishers as benchmarking for their journal portfolio.

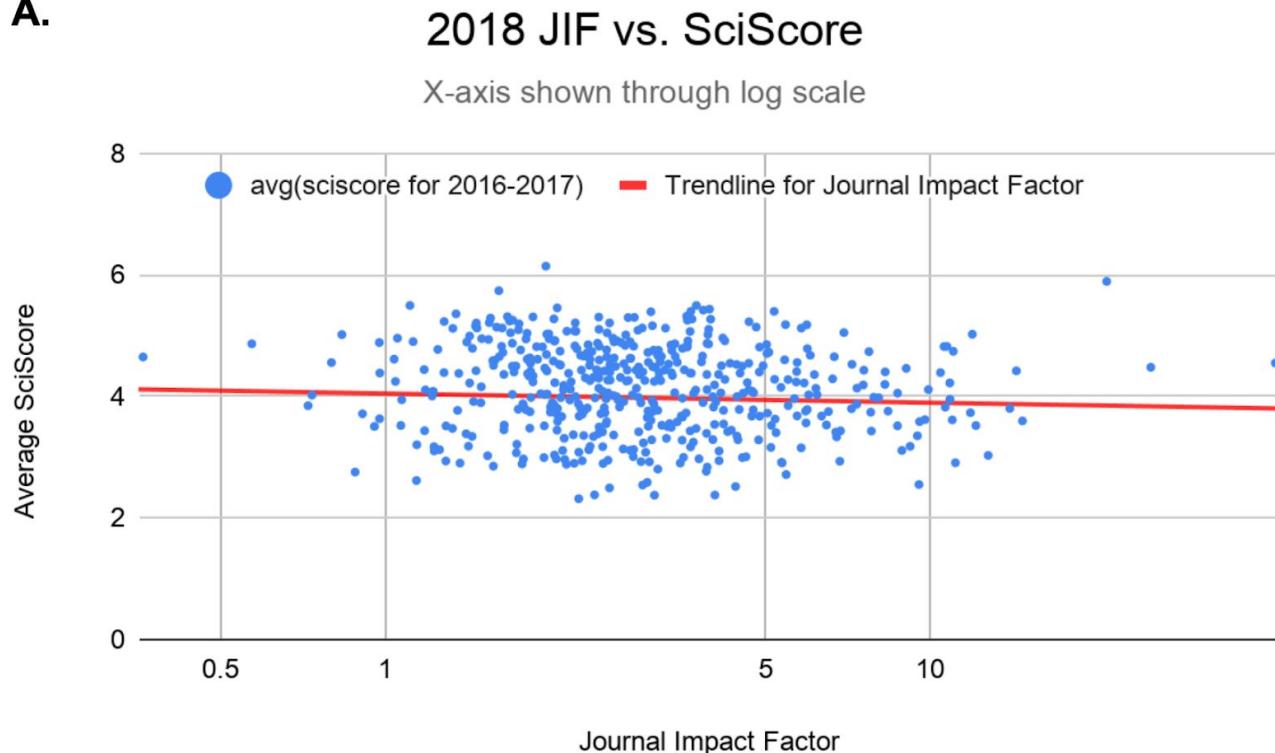
Menke et al, iScience. 2020

<http://dx.doi.org/10.1016/j.isci.2020.101698>



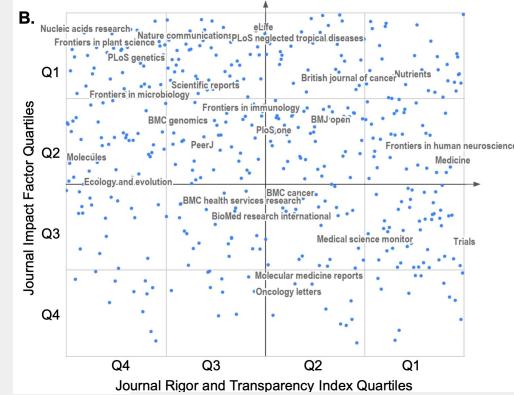
What about the Journal Impact Factor?

A.



Average journal SciScore between 2016-2017 as a function of the journal impact factor for 2018 (data from published papers from 2016-2017).

There is NO
relationship



Are these scores meaningful?



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Help support open science today.

Donate Now



REPRODUCIBILITY PROJECT Cancer Biology

Overview

Contributors & Supporters

Press & News

Get Involved

Papers on eLife

Data & Code on OSF

Project Overview

The Reproducibility Project: Cancer Biology was an 8-year effort to replicate experiments from high-impact cancer biology papers published between 2010 and 2012. The project was a collaboration between the [Center of Open Science](#) and [Science Exchange](#) with all papers published as part of this project available in a collection at [eLife](#) and all replication data, code, and digital materials for the project available in a collection on [OSF](#).

When preparing replications of **193 experiments** from **53 papers** there were a number of challenges.

2%
experiments with open data

70%
of experiments required asking for key reagents

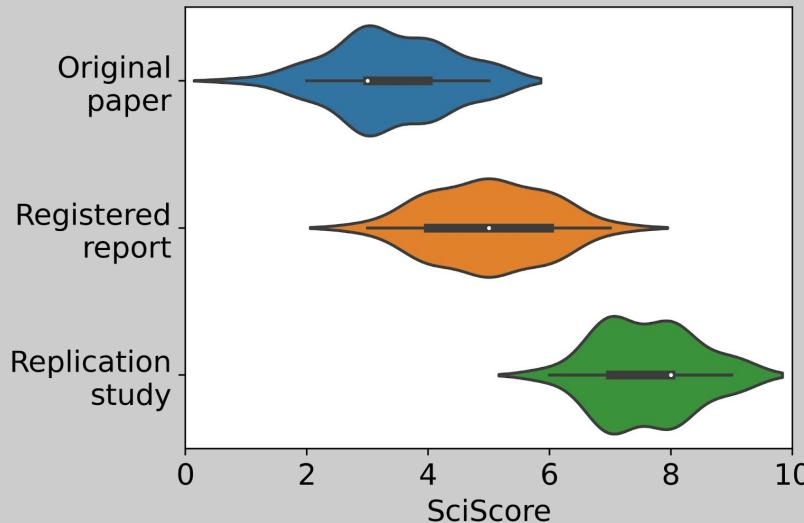
69%
of experiments needing a key reagent original authors were willing to share

0%
of protocols completely described

32%
of experiments the original authors were not helpful (or unresponsive)

41%
of experiments the original authors were very helpful

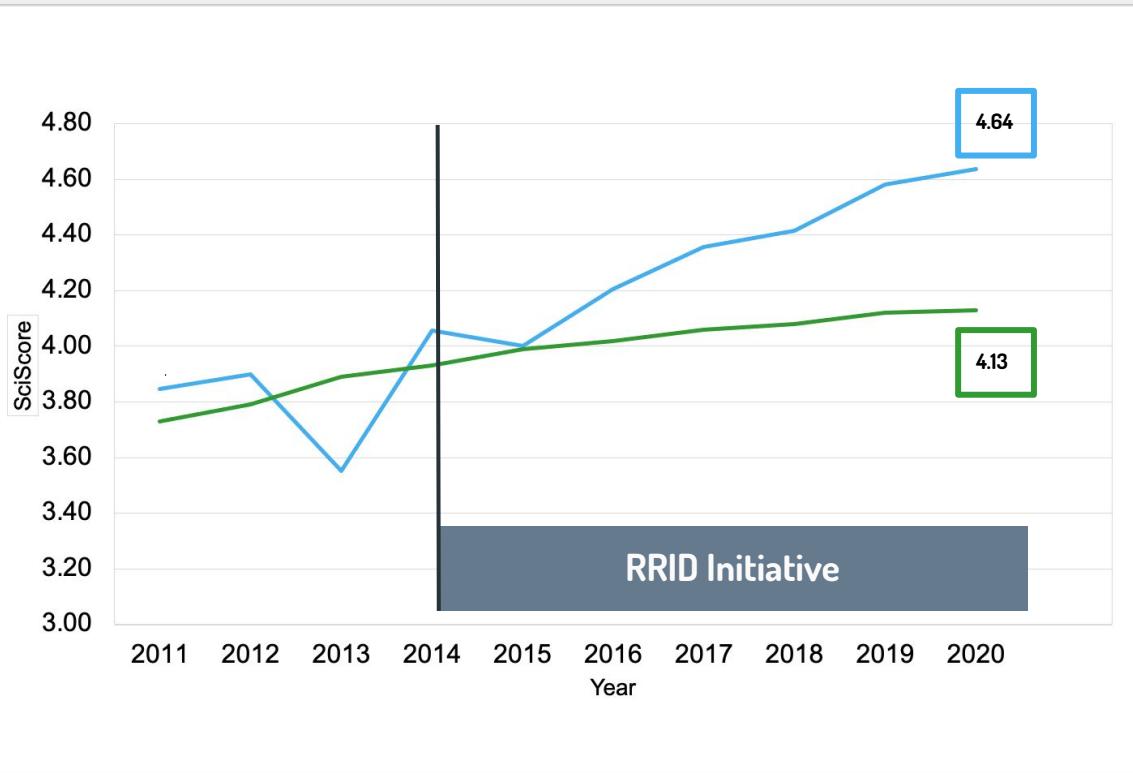
Using work by the Reproducibility Project: Cancer Biology, we determined that replication papers scored significantly higher than the original papers, which according to the project required additional information from authors to begin replication efforts.



Menke et al, JMIR, 2022

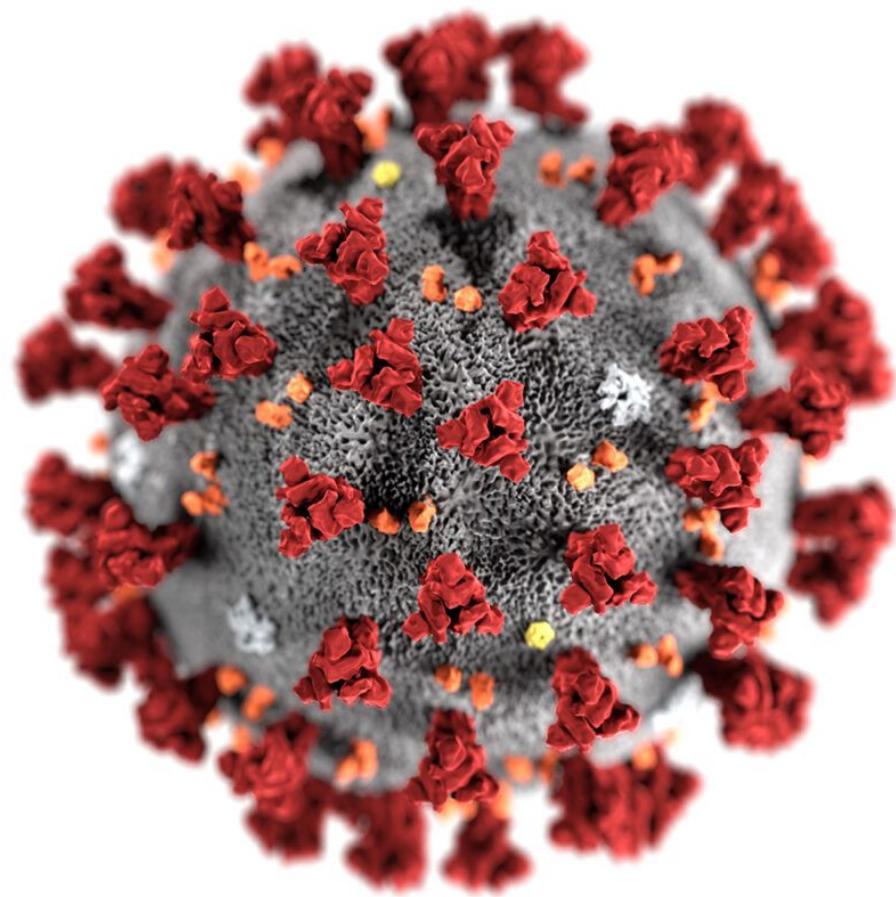
Use of MMRRC mice & with rigor?

Average Sciscore for MMRRC compared with average SciScore for all available publications



Scores are significantly different
(MMRRC papers 907;
All papers 2.1 mln)

Is the difference meaningful?

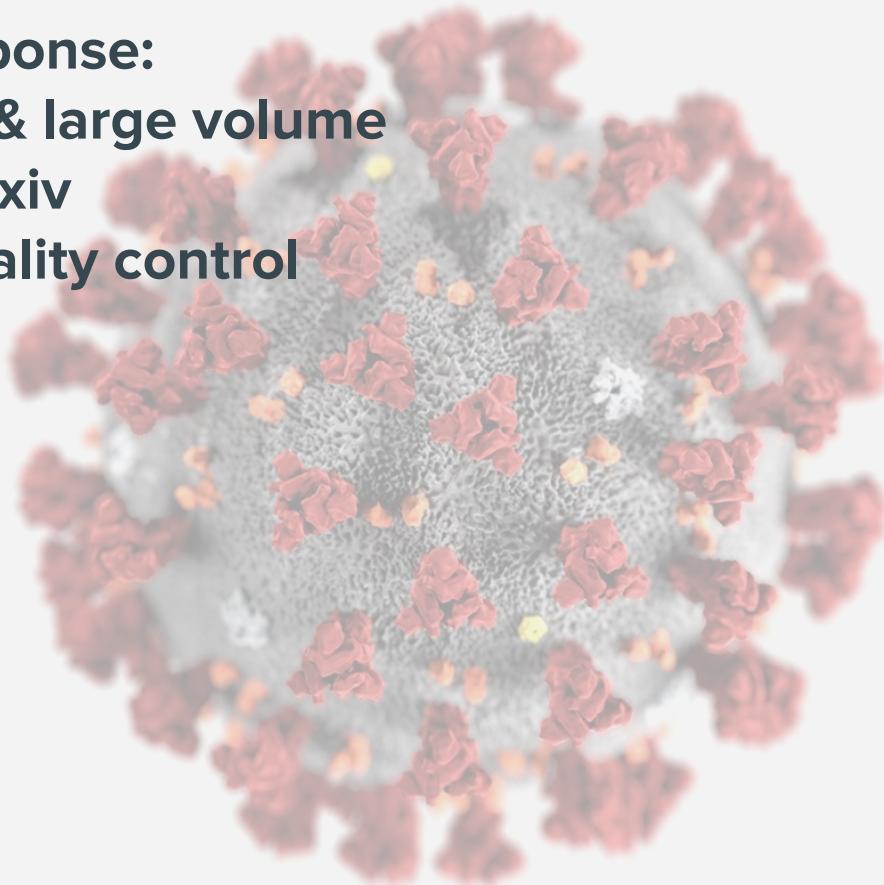


Community response:

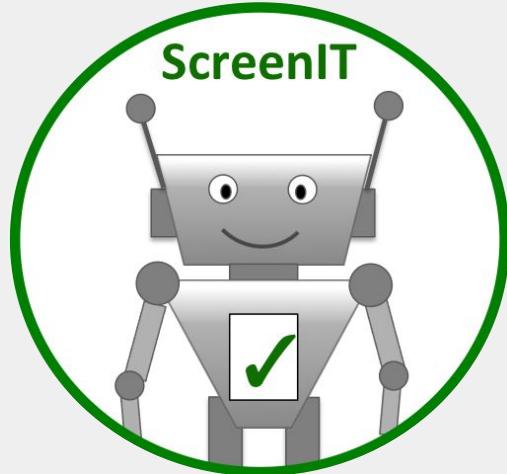
Publish quickly & large volume

BioRxiv & MedRxiv

Problem: No quality control



ScreenIT



Automated Screening Working Group:
AI-based screening of COVID-19 preprints
for rigor and reproducibility

Who are ScreenIT?

The people behind the tools:



Tracey Weissgerber, Ph.D.
Expertise: Visualization
Tools: Barzooka
QUEST – Quality | Ethics | Open Science | Translation
Charité - Universitätsmedizin Berlin
BIH Center for Transforming Biomedical Research
Germany



René Bernard, Ph.D.
Coordinator for Value and Open Science
Excellenzcluster NeuroCure
Charité - Universitätsmedizin Berlin
Germany



Anita Bandrowski, Ph.D.
Expertise: Publishing
Tools: SciScore
Department of Neuroscience
The University of California at San Diego
USA



Michèle B. Nijhuis, Ph.D.
Expertise: Statistics
Tools: Stat Check
Meta-Research Center
Department of Methodology and Statistics
Tilburg School of Social and Behavioral Sciences
Tilburg University
Netherlands



Shyam Saladi
Expertise: Code
Tools: JetFighter
California Institute of Technology
USA



Martijn Roelandse, Ph.D.
Expertise: Publishing
Tools: SciScore
Netherlands



Nick Brown, Ph.D.
Expertise: Statistics
Tools: SPRITE
Linnæus University
Sweden



Halil Kılıçoglu, Ph.D.
Expertise: Text mining, transparent reporting, stu
University of Illinois at Urbana-Champaign
School of Information Sciences
USA



AG Siegerink, Ph.D.
Expertise: Tool review
Dr. Bob Siegerink
Phantombangkum für
Iemolic



Jennifer Byrne, Ph.D.
Tools: Seek&Blastn
The University of Sydney
Faculty of Medicine and Health,
NSW Health Statewide Blobbank,
Camperdown, New South Wales,
Australia



Sarah McCann, PhD
Expertise: Systematic review and meta-analysis
Tools: Seek&Blastn
QUEST – Quality | Ethics | Open Science | Translation
Charité - Universitätsmedizin Berlin
BIH Center for Transforming Biomedical Research
Germany



Bertrand Favier, Ph.D.
Tools: Seek&Blastn
Univ. Grenoble Alpes,
TIMC-IMAG, team GREPI,
France



Peter Grabitz, M.D.
Expertise: Scripting
QUEST – Quality | Ethics | Open Science | Translation
Charité - Universitätsmedizin Berlin
Berlin Institute of Health (BIH)
Germany



Nico Riedel, Ph.D.
Expertise: Data Scientist, Text and Data Mining
Tools: Barzooka, ODDPub
QUEST – Quality | Ethics | Open Science | Translation
BIH Center for Transforming Biomedical Research
Germany



Subhashini Sivagnanam
Tools: OSC
Expertise: big data provenance
San Diego Supercomputing Center
University of California at San Diego,
USA



Gerben ter Riet, Ph.D.
Expertise: transparent reporting, acknowled
rd-Holland
Amsterdam University of Applied Sciences:
rd-Holland



Amanda Capes-Davis, Ph.D.
Tools: Seek&Blastn
CellBank Australia, Children's Medical Research Institute
The University of Sydney
Australia



Dr. Alexandra Bannach-Brown
Institute for Evidence-Based Healthcare,
Bond University
Australia



Benjamin Gregory Carlisle Ph.D
Expertise: Scripting
Tools: Trial registration number screener
Charité - Universitätsmedizin Berlin, Germany
Berliner Institut für Gesundheitsforschung (BIG) / Berlin Institute of Health (BIH)
QUEST
Germany



Peter Eichmann
Expertise: Scripting
Tools: SciScore
SciCrunch Inc.
The University of California at San Diego
USA

Who are ScreenIT?

Tool	Application
<u>SciScore</u>	Detects compliance with <u>MDAR reproducibility checklist</u> <ul style="list-style-type: none">• 24 rigor criteria verified• 6 classes of reagents verified (is this a valid catalog number?)• Authentication/contamination of cell lines verified• Statistical tests outlined
Jetfighter	Makes authors aware of their use of non-colorblind safe pictures / graphs
Barzooka	Points to misleading graphs of data, e.g., bar graphs of continuous variables
Seek 'n Blastn	Identifies common problems with nucleotide sequences
Trial Registration screener	Verified clinical trial identifiers
ODDpub	Screens for the presence of open data and open code
limitation-recognizer	Recognizes self acknowledged limitation sentences
Scite.ai	Smart citations; looks for unacknowledged use of retracted papers
rtransparent	Identifies and extracts indicators of transparency

Many other tools are strewn throughout the scientific literature; lots of AI experts are joining us

First achievement: Running various tools on covid-19 preprints

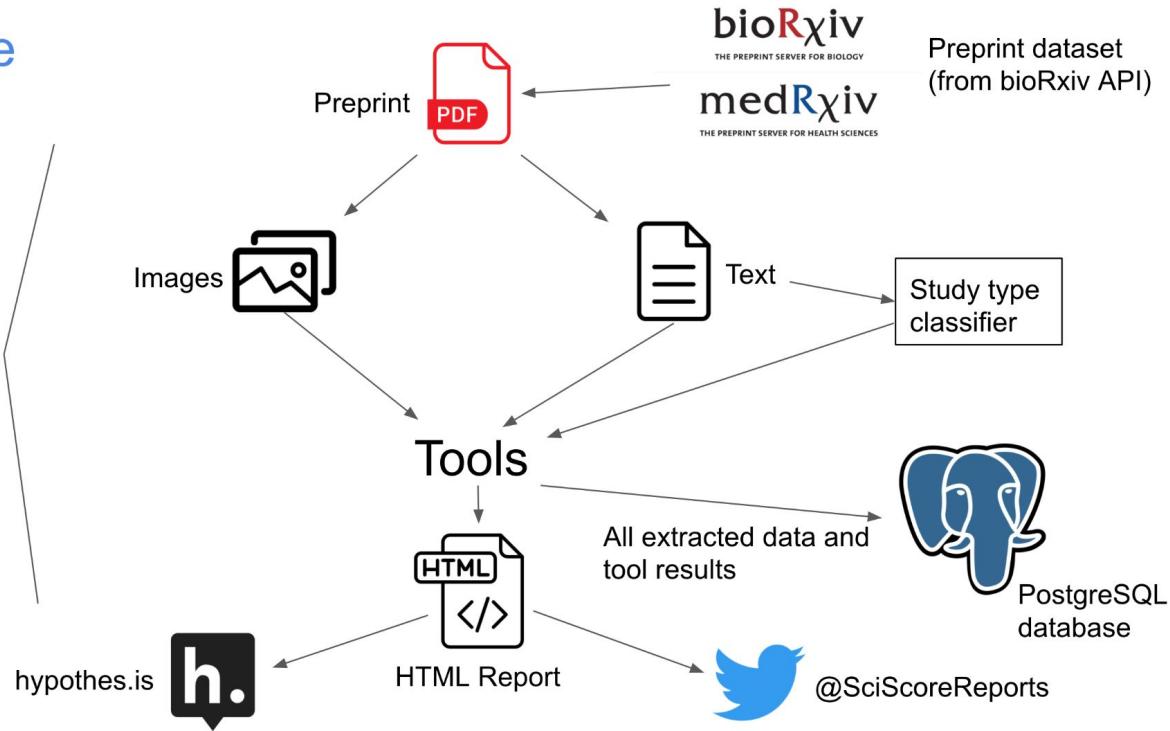


Peter Eckmann
ORCID:0000-0002-5388-9451
UC High School
Currently undergrad
At UCSD in
Computer Science

Outline



Containerized
with Docker;
currently
running at
Charité server



Output shared via social media / hypothesis



SciScore Reports [@SciscoreReports](#)

Fast, accurate & secure SciScore is the ultimate scientific article materials review tool. What's your SciScore?

scicrunch.org/ASWG Joined May 2020

4 Following | 141 Followers

Tweets **Tweets & replies** **Media** **Likes**

 **SciScore Reports** [@SciscoreReports](#) · 13h
The paper "A benchmarking study of SARS-CoV-2 whole-genome se..." ([biorxiv.org/cgi/content/sh...](https://www.biorxiv.org/cgi/content/sh...)) has been reviewed by a set of automated tools; find the results of the analysis here: hyp.is/kFOOsCQTfEubz...... We detected 9 key resources.

 Hypothesis annotation for biorxiv.org
SciScore for 10.1101/2020.11.10.375022: (What is this?)
Please note, not all rigor criteria are appropriate for ...
↗ [hyp.is](#)

 **SciScore Reports** [@SciscoreReports](#) · 13h
The paper "Potent SARS-CoV-2 neutralizing antibodies selected..." ([biorxiv.org/cgi/content/sh...](https://www.biorxiv.org/cgi/content/sh...)) has been reviewed by a set of automated tools; find the results of the analysis here: hyp.is/jkCNjQTfEubz...... We detected 1 of 6 rigor criteria and 23 key resources.

 Hypothesis annotation for biorxiv.org
SciScore for Please note, ...
↗ [hyp.is](#)

 **SciScore Reports** [@SciscoreReports](#)
The paper "Nafamostat Mesylate" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8530323/>) has been reviewed by a set of automated tools; find the results of the analysis here: hyp.is/1JyDwvTfEubz...... rigor criteria and 3 key resources.

 Hypothesis annotation for biorxiv.org

24K posts
260 followers
>1M views

Public [Sign up / Log in](#)

Showing 1 annotation [Show all \(0\)](#)

sciscore 13 hrs ago

sciscore for 10.1101/2020.11.09.20226551. ([What is this?](#))

Please note, not all rigor criteria are appropriate for all manuscripts.

Table 1: Rigor

Institutional Review Board Statement	The study protocol was approved by the appropriate Institutional Review Boards (IRB) and national regulatory authority for each site, and was registered with ClinicalTrials.gov (Identifier: NCT 04449276).
Randomization	After assessing safety data for 60 hours, the ISRC and DSMB approved the vaccination of the remaining participants of that dosage group (including placebo subjects and subjects known to be seropositive for SARS-CoV-2, randomized and blinded to the next sentinels of the next higher dosage group).
Blinding	METHODS The first-in-human, placebo-controlled, blinded phase 1 trial of CVnCoV enrolled healthy adults (18 to 60 years).
Power Analysis	not detected.
Sex as a biological variable	Also excluded were active smokers within the previous year, pregnant or breastfeeding women, study sponsors, and study staff employees or relatives.
Cell Line Authentication	not detected.

Table 2: Resources

Antibodies	
Sentences	Resources
The main secondary objectives were the evaluation of the humoral immune response measured by SARS-CoV-2 S protein-specific IgG and RBD IgG (ELISA) antibodies, as well as SARS-CoV-2 virus neutralizing antibodies.	RBD IgG suggested: None
Experimental Models: Cell Lines	
Sentences	Resources
Afterwards, semi-confluent Vero E6 cells (ATCC, Cat. 1580) were incubated with the virus serum mixtures at 37°C 5% CO ₂ for 3 days.	Vero E6 suggested: None

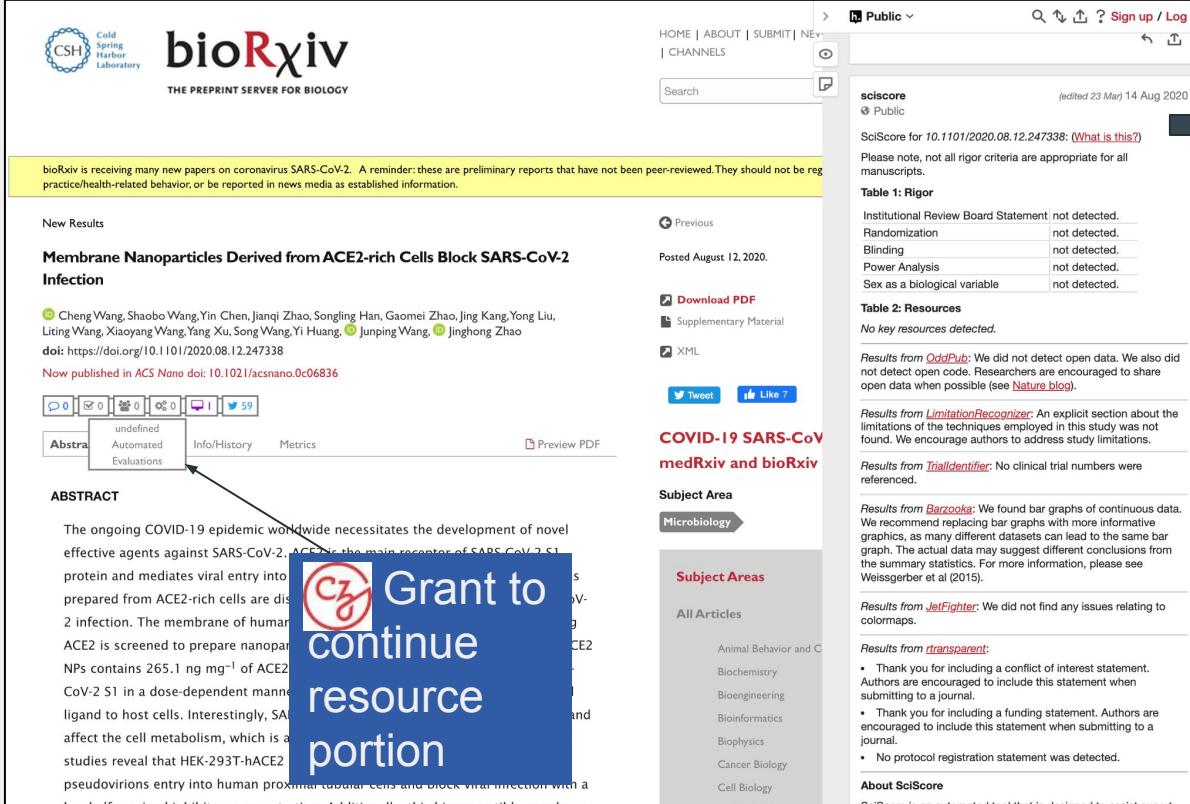
Results from OddPub: We did not detect open data. We also did not detect open code. Researchers are encouraged to share open data where possible (see [Nature blog](#))

Results from LimitationRecognizer: An explicit section about the limitations of the techniques employed in this study was not found. We encourage authors to address study limitations.

Results from TrialIdentifier: We found the following clinical trial numbers in your paper:

Identifier	Status	Title
NCT04449276	Recruiting	A Study to Evaluate the Safety, Reactogenicity and Immunogen...

Preprints are not as good as papers when it comes to rigor & transparency



The image shows a screenshot of a bioRxiv preprint page. At the top left is the bioRxiv logo and "THE PREPRINT SERVER FOR BIOLOGY". The main title is "Membrane Nanoparticles Derived from ACE2-rich Cells Block SARS-CoV-2 Infection". Below the title is a summary of authors: Cheng Wang, Shaobo Wang, Yin Chen, Jianqi Zhao, Songling Han, Gaomei Zhao, Jing Kang, Yong Liu, Liting Wang, Xiaoyang Wang, Yang Xu, Song Wang, Yi Huang, Junping Wang, Jinghong Zhao. The DOI is <https://doi.org/10.1101/2020.08.12.247338>. A note says "Now published in ACS Nano doi: 10.1021/acsnano.0c06836". Below the summary are social media sharing icons (0 shares, 0 comments, 0 likes, 0 saves, 0 tweets, 159 LinkedIn shares) and links for "Abstract", "Info/History", "Metrics", and "Preview PDF". An arrow points from the "Abstract" link to a blue box containing text about a grant.

Grant to continue resource portion

The blue box contains text: "The ongoing COVID-19 epidemic worldwide necessitates the development of novel effective agents against SARS-CoV-2. ACE2 is the main receptor of SARS-CoV-2. S1 protein mediates viral entry into host cells. We have found that membrane nanospheres prepared from ACE2-rich cells are disintegrants. The membrane of human ACE2 is screened to prepare nanoparticles. The nanoparticle suspension contains 265.1 ng mg⁻¹ of ACE2. It inhibits S1 in a dose-dependent manner. ACE2 is a ligand to host cells. Interestingly, S1 does not affect the cell metabolism, which is a key feature of S1. Our studies reveal that HEK-293T-hACE2 pseudovirions entry into human proximal tubular cells and block viral infection with a

At the top right of the bioRxiv page is a "Public" section with a "sciscore" entry. The sciscore page has a header "sciscore (edited 23 Mar) 14 Aug 2020". It includes a note: "Please note, not all rigor criteria are appropriate for all manuscripts." Below this are two tables: "Table 1: Rigor" and "Table 2: Resources". "Table 1: Rigor" lists the following rigor criteria:

Institutional Review Board Statement	not detected.
Randomization	not detected.
Blinding	not detected.
Power Analysis	not detected.
Sex as a biological variable	not detected.

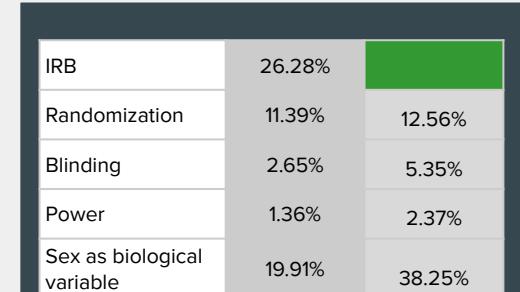
"Table 2: Resources" notes: "No key resources detected."

On the right side of the bioRxiv page is a sidebar titled "Subject Area" with "Microbiology" selected. It also lists "Subject Areas" such as Animal Behavior and Cognition, Biochemistry, Bioengineering, Bioinformatics, Biophysics, Cancer Biology, and Cell Biology.

At the bottom right of the bioRxiv page is a "About Sciscore" section with a link to "DOI:10.1101/2020.08.12.247338".



The SciScore logo consists of a stylized orange hexagonal shape with internal lines forming a cube-like structure, followed by the word "sciscore" in a lowercase sans-serif font.



IRB	26.28%	<div style="width: 26.28%; background-color: #2e7131;"></div>
Randomization	11.39%	<div style="width: 11.39%; background-color: #2e7131;"></div>
Blinding	2.65%	<div style="width: 2.65%; background-color: #2e7131;"></div>
Power	1.36%	<div style="width: 1.36%; background-color: #2e7131;"></div>
Sex as biological variable	19.91%	<div style="width: 19.91%; background-color: #2e7131;"></div>

Weissgerber et al NatMed 2021

<https://www.nature.com/articles/s41591-020-01203-7>

Reproducibility Challenge



Too many mice are sacrificed for seriously flawed studies

Updated by Julia Belluz on July 28, 2016, 10:20 a.m. ET [@juliaoftoronto](#) julia.belluz@voxmedia.com

Science

Evaluating replicability of laboratory experiments in economics

Colin F. Camerer,^{1,*†} Anna Dreber,^{2‡} Eskil Forsell,^{2†} Teck-Hua Ho,^{3,4†} Jürgen Huber,^{5†} Magnus Johannesson,^{2†} Michael Kirchler,^{5,6‡} Johan Almenberg,⁷ Adam Altmejd,² Taizan Chan,⁸ Emma Heikensten,² Felix Holzmeister,⁸ Taisuke Imai,¹ Siri Isaksson,² Gideon Nave,¹ Thomas Pfeiffer,^{9,10} Michael Razen,⁵ Hang Wu⁴

TECHNICAL COMMENT

PSYCHOLOGY

Comment on “Estimating the reproducibility of psychological science”

Daniel T. Gilbert,^{1,*†} Gary King,¹ Stephen Pettigrew,¹ Timothy D. Wilson²

Reforming Science: Methodological and Cultural Reforms

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Open Science Collaboration*†

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PERSPECTIVE

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Stavros C Manolagas¹ and Henry M Kronenberg²

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