

THE
PEW
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SPARKing New Antibiotics Discovery

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Emerging Technologies in AMR
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Pew's Antibiotics Resistance Project





WHAT IS SPARK?

(Shared Platform for Antibiotic Research & Knowledge)



SPARK: An Interactive, Publicly Available Antibiotics Discovery Tool

Primary Goal

Facilitate collaborative research focused on Gram-negative drug entry and efflux, leading to discovery and development of novel antibiotics.

Scope

- ✓ Small molecules
- ✓ Gram-negative pathogens
- ✓ Early discovery phase data

Non-traditional (e.g., biologics)

Gram-positive pathogens
Out of Scope

Pre-clinical and clinical data (e.g., IND-enabling, patient data)

Features

- Free to use
- Expanded compound libraries w/ associated assay data
- Curated assay data based on assay type (MIC, IC50), rather than data source
- Enhanced data modeling and trend analyses



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SPARK: Powered by CDD Vault

Easy and
multi-parameter
queries

The screenshot shows the SPARK search interface with several filters highlighted by red circles and callouts:

- Assays (MIC, IC50):** A red circle highlights the 'Assays' section, which includes filters for 'In' (Brown - LpIC IC50 Inhibition Data - Journal Medicinal Chemistry), 'Species' (Pseudomonas aeruginosa), and 'IC50 (µM)' (10 µM).
- Chemical Structures:** A red circle highlights the 'Structures' section, which includes a 'Launch the Structure Editor' button.
- Chemical Properties:** A red circle highlights the 'Chemical Properties' section, which includes a '(select property)' dropdown and 'Min:' and 'Max:' input fields.

Assays
(MIC, IC50)

Chemical
Structures

Chemical
Properties

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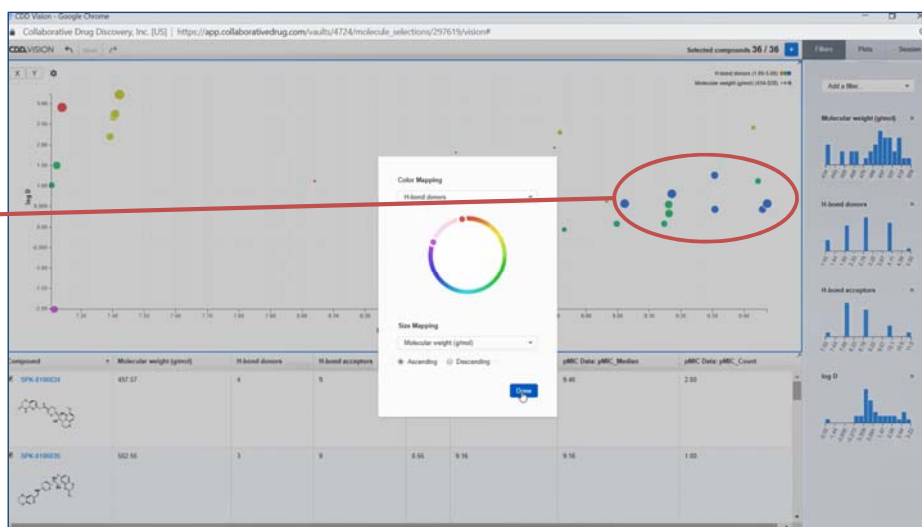
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SPARK: Powered by CDD Vault

Customizable
analytics

Zoom in clusters
of interest

Export plots to
publication-
quality PDFs



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SPARK Officially Launched on September 21, 2018

September 21, 2018

SPARK Has Launched!

Pew announced today the rollout of its **Shared Platform for Antibiotic Research and Knowledge (SPARK)** – a cloud-based, publicly available, virtual laboratory that enables scientists from around the world to share data and insights, learn from past research, and generate new insights into how molecules enter and stay inside of Gram-negative bacteria.

September 21, 2018

American Chemical Society Viewpoint

DOI: 10.1021/acsinfecdis.8b00193

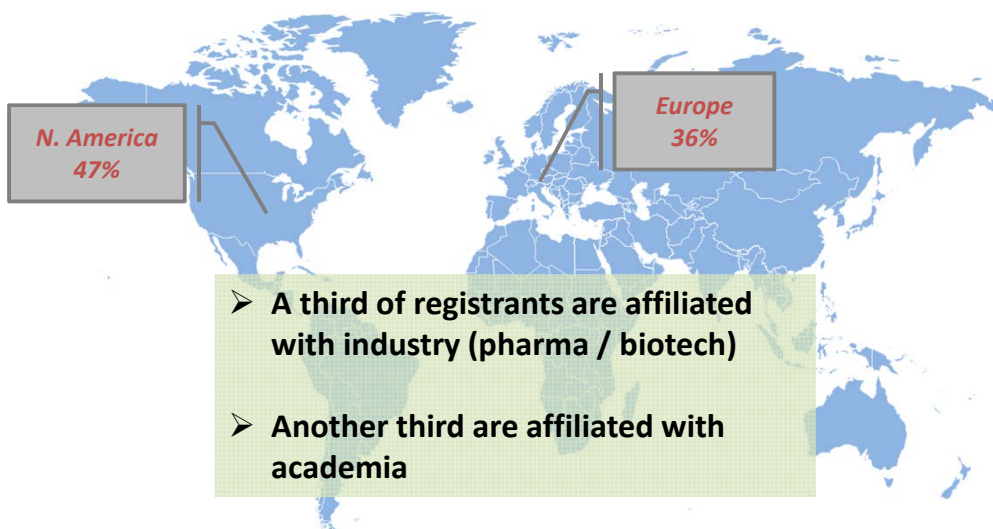
Shared Platform for Antibiotic Research and Knowledge: A Collaborative Tool to SPARK Antibiotic Discovery

By Joe Thomas, Marc Navre, Aileen Rubio, and Allan Coukell

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Over 170 Global Registrants Since September 2018 launch!



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Recently Announced Data Contribution (...and More to Come!)

October 22, 2018

Achaogen

Biopharmaceutical company Achaogen and The Pew Charitable Trusts announced a groundbreaking agreement today to share data from Achaogen's discontinued **LpxC inhibitor** antibiotic research program on Pew's open-access SPARK.

Announcement Coming Soon!

Stay tuned for exciting announcement regarding additional data contribution from industry...

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Become a SPARK User

- Engage the SPARK community
 - Contact Wes Kim to access SPARK (wkim@pewtrusts.org)
 - No cost to use!
- Utilize SPARK for your own research
- Suggest data sources – published or unpublished
- Contribute data: SPARK-data@pewtrusts.org

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