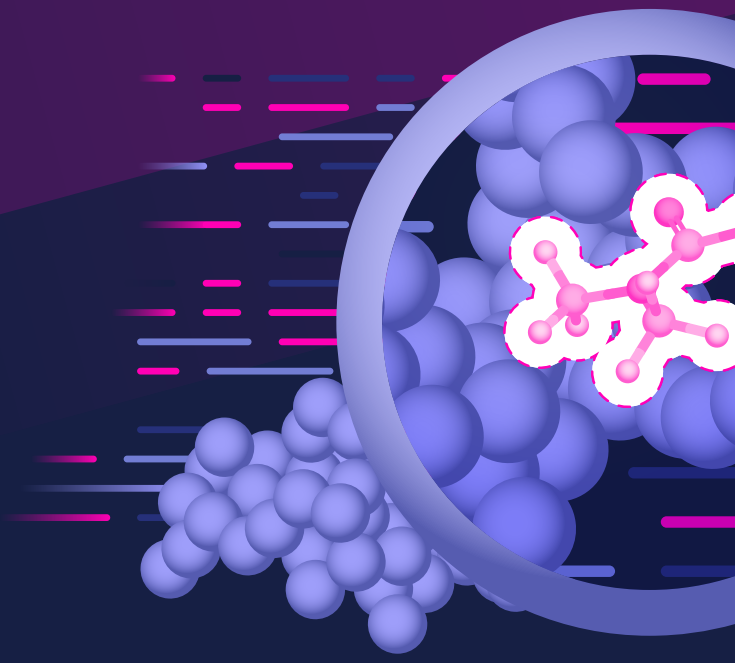
CUSTOMER STORY

DRUGBANK + ARIA PHARMACEUTICALS

Aria is speeding up drug discovery with AI & DrugBank



ABOUT ARIA PHARMACEUTICALS

Aria is an AI-enabled pharmaceutical company focused on finding new medicines for complex and difficult to treat diseases.

They have redefined the drug discovery approach, saving years in the process, and increased success rates 30 times higher than traditional methods.

WEBSITE
ariapharmaceuticals.com

SOLUTION
DrugBank's Datasets

USE CASE
Machine Learning in Drug Discovery

THE CHALLENGE

When Aria started in drug discovery, AI was not at all common in the field. In their earliest days as an academic project, they found themselves in need of reliable, machine learning ready data to help them determine the viability of their approach. Their goal was to incorporate AI software to improve drug discovery success rates and identify efficiencies. Their efforts ended up getting raised eyebrows and skeptical remarks.

A lot has changed since that time, but one thing that remains the same is their need for a vast range and depth of reliable drug data.

Aria's approach, and one thing that sets them apart from others in the drug discovery space, is their use of an exceptionally heterogeneous mix of data. Their strength is in their ability to pull together so many different data sources, but that can only work if the data they're using is structured, reliable, and able to offer new insights.

While there are datasets that have millions of compounds, many are extremely sparse and of intermittent quality.

The biggest challenge for Aria is consistently sourcing high-quality data that is up-to-date.

Without extensive data, they cannot rely on their outcomes to push the boundaries of medicine and pharmaceutical drug discovery forward.

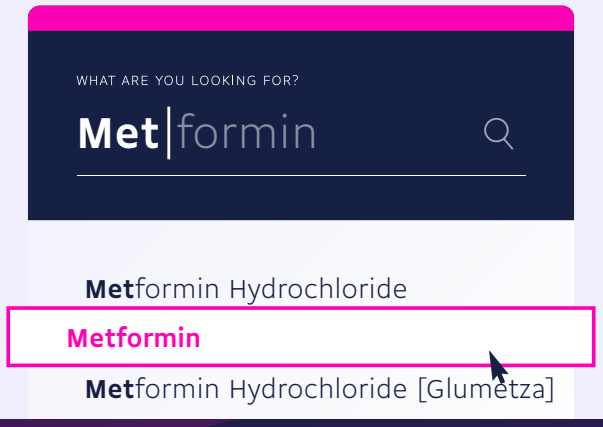
THE SOLUTION

DrugBank provided them with the high-quality and trustworthy data they needed to explore and verify the potential their methods had to drastically speed up the drug discovery process, and has, since that time remained an integral part of Aria's operations.

As Aria's scope expanded, so did the extent of data they needed. Today, Aria relies on DrugBank for a vast array of drug data, including **drug names, chemical structures, drug targets, pharmacology, and metabolism information**. Aria also integrates disease-specific, patient-derived data including gene expression, genetics data, micro RNA data, and much more.

Aria was founded on a principle of looking at numerous independent data sources to help achieve a more holistic model of the diseases they're studying.

DrugBank's rich data sources have repeatedly proved to be a powerful tool for Aria and their AI to rely on.



THE RESULTS

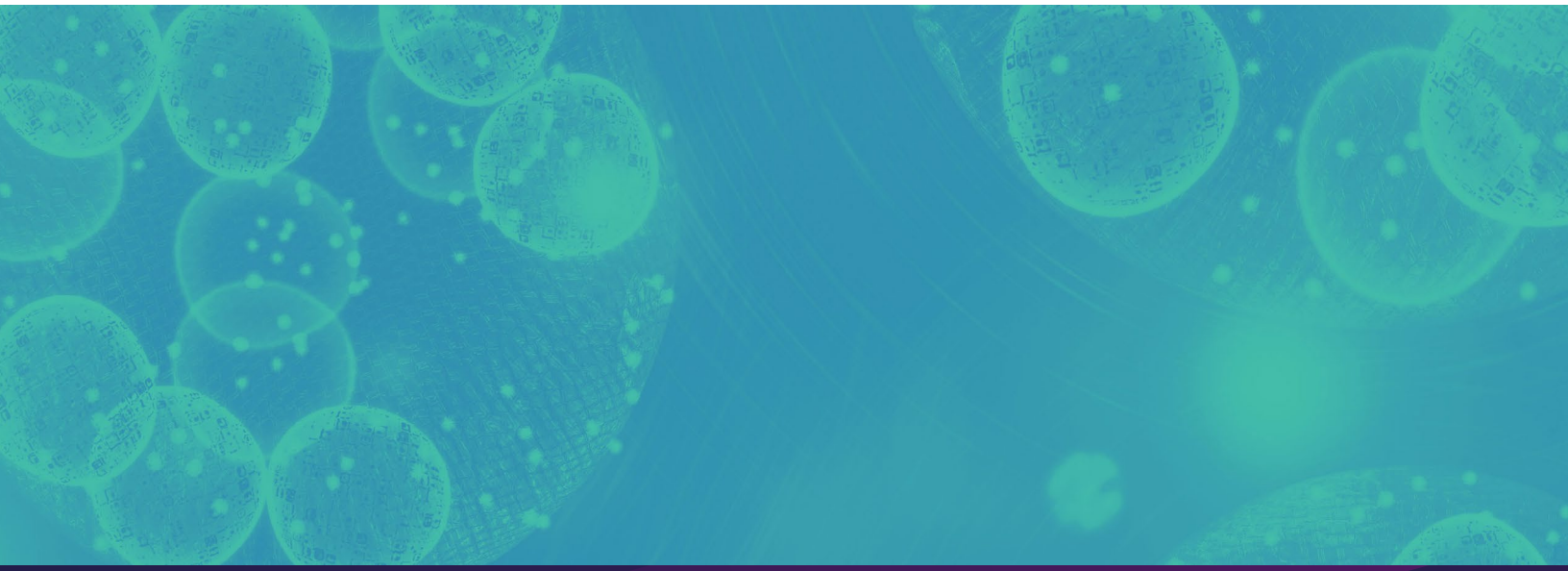
As a result, Aria has been able to shorten the early stages of *de novo* drug discovery from four to six years down to six months to a year.

And, they've been able to transform the average success rate from one percent to upward of 30%.

By integrating a diverse range of high-quality data into their software Aria has been able to expedite dozens of promising treatments across therapeutic areas toward preclinical trials. All of their candidates have demonstrated sound safety and efficacy signals against some of the most challenging diseases.

"We've always appreciated the level of detail DrugBank provides for any one molecule. And then to know they maintain 10,000+ molecules; this level of depth and breadth is exactly what we need."

— **Aaron Daugherty,** *VP Discovery*



Request a data sample today!

And uncover better findings

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