DRUGBANK

MOLECULAR HEALTH CASE STUDY

Changing the Healthcare Ecosystem using Data-Driven Technology

MOLECULAR HEALTH

ABOUT MOLECULAR HEALTH

Molecular Health is a transformational biomedical intelligence company with the mission of improving human health by liberating the power of clinical and molecular data.

molecularhealth.com

INDUSTRY
Big Data Analytics

USE CASE
Data-Driven Decision Making

TELL US ABOUT MOLECULAR HEALTH

Capitalizing on our Dataome technology platform, we perpetually capture, enrich, and integrate the world's biomedical data in a quality-controlled environment – delivering more intelligent data for healthcare.

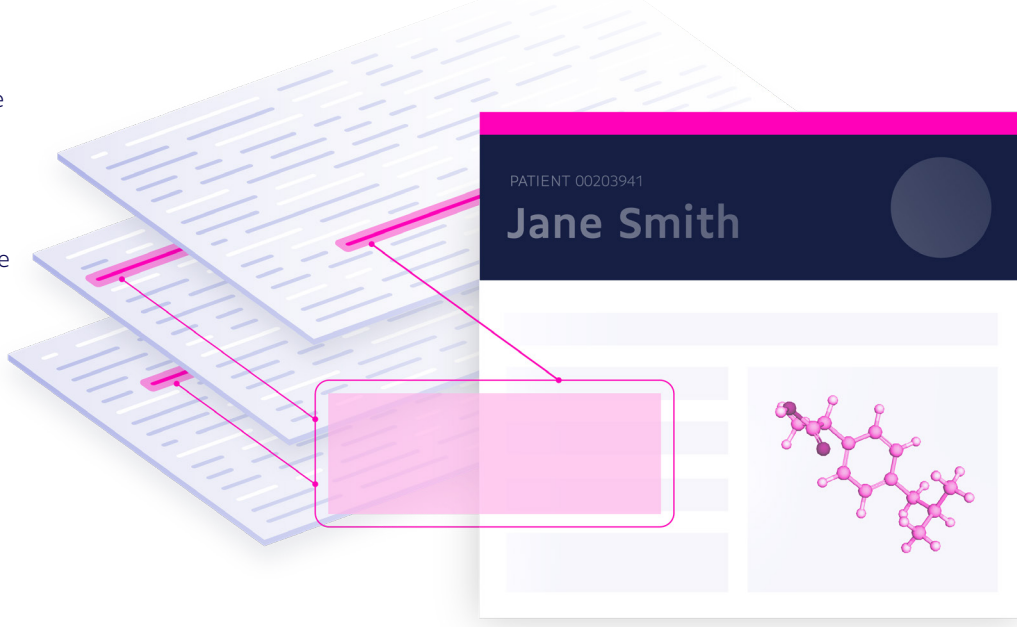
We utilize this evidence base to build disruptive analytical technologies that enable knowledge creation and paradigm change throughout the healthcare ecosystem. Dataome – as a stand-alone or in combination with customer data – enables the unlocking of actionable intelligence at the molecular level to a) improve diagnosis and therapy decisions by physicians and patients; b) enrich and support drug differentiation and positioning for pharma and healthcare organizations; and c) more accurately predict the probability of technical success of clinical trials and the likelihood of approval of drug candidates in clinical development for better trial prioritization and resource and investment allocation.

DrugBank is a widely used data source for companies working in the pharmaceutical, healthcare, and technology space. The data integrates seamlessly into in-house products, to enhance outcomes for data-driven decision-making.

Molecular Health is one such company making use of DrugBank's extensive structured data. We sat down with Molecular Health's Project Management Office to learn more about how they use DrugBank data to improve human health.

TELL US MORE ABOUT YOUR ROLE AT MOLECULAR HEALTH

The Project Management Office (PMO) resides in the core of Molecular Health GmbH and is responsible for the coordination and steering of the Molecular Health project portfolio in a multi-project landscape. The PMO communicates and coordinates between the different Molecular Health teams like Pharma, Research, Data Integration, Content Curation, Product Management, Application Development, Quality Management, and Scientific Field Support.



HOW DOES MOLECULAR HEALTH INTEGRATE AI / ML INTO ITS PRODUCTS?

Molecular Health uses Artificial Intelligence (AI) and Machine Learning (ML) whenever appropriate for the purpose of the product we are creating. Currently, our product Molecular Health Predict (MH Predict) makes use of AI/ML techniques. MH Predict predicts the likelihood of technical success of clinical trials, a quite challenging task given the many parameters that can play a role in drug development and trial conduction. The predictive engine itself is built using ML algorithms. On top of that we offer customers insight into the "reasoning" of the predictive engine by using explanatory AI techniques. This is a rather new field in ML and we use many of the latest approaches for showing feature importance and feature effects.

HOW IS DRUGBANK USED IN MOLECULAR HEALTH'S PRODUCTS?

DrugBank is one of our primary sources for drug-related information. Most importantly, Molecular Health relies on DrugBank's drug structure, classification, synonyms, and drug targets, as well as drug-drug interactions. We combine DrugBank with other sources and in-house curation to obtain an integrated drug resource (MH Drug) which is essential for many Molecular Health products (e.g., MH Guide, MH Predict, MH Effect) and Molecular Health projects.

WHY IS STRUCTURED CLINICAL DRUG DATA SO IMPORTANT?

The field of drug discovery and development is one of the most complicated fields for data science in terms of obtaining, understanding, and transforming data. This has to do with the fact that many data are generated and kept within pharma companies, and that many data are not easy to harmonize (e.g., pharmacological assay data).

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In cases where pharma companies are forced to publicize data, for registries like clinicaltrials.gov, the discipline in updating or correcting data in a timely manner is often limited. Often information about drugs and trials can only be extracted from websites, presentation abstracts, or publications in non-automatable ways. Extraction of specific data often needs interpretation and therefore a good biomedical understanding by the curator. Molecular Health therefore uses structured data sources in this area wherever they are available, such as DrugBank, and complements this data with its own curated data and quality control measures.

What made you choose DrugBank in your data-driven products?

We value DrugBank as a well-established, comprehensive, and constantly improving drug database. It is easy to use, has excellent support, and a very high quality of drug information.