Introducing pharmaKB KnowledgeBase

The Pharmaceutical Knowledgebase from Collaborative Drug Discovery, Inc.

pharmakb.com
info@pharmakb.com
Overview

PharmaKB provides daily data to make informed decisions about the values and risks associated with pharmaceutical companies based on the performance of their commercial and developing drug programs.

Data includes:

- Tickers
- Revenues per Drug
- Stage of Development
- Probability of Trial Success
- Length of Clinical Trials
- Competitive Companies and Drugs by Disease Market and Target
- Patent Cliffs
- Exclusivity Periods
- Disease Population Size
- Drug Prescribing & Pricing
- Research Publication Trends
- Safety Signals
- and Many Other Factors.

With PharmaKB,

- Analyze 1700+ pharma companies (600+ mapped to tickers) with 450+ ranging from 100M to 400B market cap.

- Evaluate investment options with access to daily pharmaceutical trends, including financials, R&D milestones, and competitive intelligence.

- Track market changes and get alerted to shifts in the competitive landscape, such as new drug entries into disease areas, patents, trials, revenues.

- Sharpen stock and revenue prediction confidence via quantitative data and time series methods, including competitive drugs, patent cliffs, trials, publications, and adverse events, trial success probabilities, epidemiological data, and more.
Alternative Pharmaceutical Data to Track Milestones & Performance Metrics

Companies
1700+ (~600 tickers)
(~500 ranging from 100M to 400B Market Cap)

Diseases
4000+ (Competitive Markets)

Drugs
4600+ (Products)
PharmaKB collects and curates information from 100’s of sources  Updated Daily!

- Regulatory
  - U.S. FOOD & DRUG ADMINISTRATION
  - FDA Adverse Event Reporting System (FAERS) Public Dashboard
  - National Library of Medicine
  - ClinicalTrials.gov
  - European Medicines Agency
  - and more

- Scientific & Technical
  - ChEMBL
  - UniProt
  - PDB Protein Data Bank
  - National Library of Medicine
  - PubChem
  - and more

- Financial & IP
  - Pfizer
  - Bristol Myers Squibb
  - Boehringer Ingelheim
  - Allergan
  - Sanofi
  - Many more...
  - Original Pharma Co SEC Reporting & Patent Filing
Access Content via 3 Methods

Web Application
(Dashboards & File Downloads)

Company View
Drug View
Disease View
(competitive landscape)

API Access
(All Data)

GraphiQL

Custom Data Portal
(PharmaKB+)

Market Intelligence & Modeling Datasets
(Github or S3)
PharmaKB web content is available through easy to interpret and integrated views:

**Drug View**
- Drug Name
  - Commercial
  - Clinical
  - Drug Entity
  - Target
  - Financial
  - Trends
  - Safety

**Company View**
- Company
  - Drug Portfolio
  - Active Trials
  - Patents
  - Revenue

**Disease View**
- Disease
  - Name(s)
  - Disease
  - Target
  - Relationships

Web Application
(Dashboards & File Downloads)
**Web Application**
(Dashboards & File Downloads)

**Company View:** Review Portfolios

**Drug View:** Detailed Product Profiles

**Disease View:** Search by Competitors

**AbbVie**
AbbVie is an American publicly traded biopharmaceutical company founded in 2013. It originated as a spin-off of Abbott Laboratories.

**Marketed Drugs**

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Drug Name</th>
<th>Approved</th>
<th>Patent Expires</th>
<th>Indication</th>
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<tr>
<td>Galapagos</td>
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<td>2000-03-03</td>
<td>2024-2037</td>
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<td>2002-12-31</td>
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<tr>
<td>Otsuvix</td>
<td>Dexamethasone</td>
<td>2010-07-26</td>
<td>2022-2039</td>
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<tr>
<td>Rinvoq</td>
<td>Upadacitinib</td>
<td>2019-08-16</td>
<td>2030-2036</td>
<td>Rheumatoid arthritis</td>
</tr>
</tbody>
</table>

**MeSH D001172 - Arthritis, Rheumatoid**
A chronic systemic disease, primarily of the joints, marked by inflammatory changes in the synovial membranes and articular structures, widespread fibrovascular degeneration of the collagen fibers in the synovial tissues, and by gliosis and calcification of the structures. Erosions to osteopenia, but autoimmune mechanisms have been implicated.

**At a Glance**

- **Commercial**

**Dashboards & File Downloads**
Disease View:
Browse the competitive landscape for companies with commercial or trial drugs that target the same disease markets

Web Application
(Dashboards & File Downloads)

MeSH D001172 - rheumatoid arthritis

Competitive landscape

See full view

D001327: Autoimmune diseases
351 Companies | 87 Drugs | $

D001168: Arthritis
420 Companies | 109 Drugs | $

D012216: Rheumatic diseases
228 Companies | 25 Drugs | $

D005258: Felty syndrome
20 Companies | 3 Drugs | $

D012859: Sjogren's syndrome
260 Companies | 72 Drugs | $

D016705: Adult-onset still's disease
7 Companies | 8 Drugs | $

D056653: Rheumatoid vasculitis

Commercial

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Drug Name</th>
<th>Trade Name</th>
<th>Patent Expires</th>
<th>Approval Date</th>
<th>Revenue</th>
<th>Period</th>
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<tr>
<td>A.H. Robins Company</td>
<td>CHLORPHENIRAMINE</td>
<td>Dimetane-dx</td>
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<td>2022-08-18</td>
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<td></td>
<td>DEXTRIMETHORPHAN</td>
<td>Dimetane-dx</td>
<td>2023-03-10</td>
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</tbody>
</table>

Clinical Trials

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
<th>Drug Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Phenylephrine</td>
</tr>
<tr>
<td>A.H. Robins Company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diphenhydramine, Hydrocortisone, Leucovorin, Methylprednisolone</td>
</tr>
</tbody>
</table>
Company View:
Browse individual drug revenues for companies and track historical and developing drugs through clinical trials.

See Live Preview...
https://www.pharmakb.com/sample-data#company-report
Web Application
(Dashboards & File Downloads)

Drug View:
Browse drug profiles by their commercial, clinical, financial, safety, research publication, and target data.

See Live Preview... https://www.pharmakb.com/sample-data#drug-report
API Access
(All Data)

PharmaKB content is built on a **GraphQL database** which is programmatically accessible via **GraphQL API** in addition to the Application’s JSON/CSV/EXCEL/PPT downloads.

Browse PharmaKB API Documentation. [https://www.pharmakb.com/api-documentation](https://www.pharmakb.com/api-documentation)
Custom Data Portal
(PharmaKB+)
Accessible on GitHub or S3

Find Alpha Signals!

Market Intelligence & Modeling Datasets

- Medical Expenditure Panel Survey Data
  US household market spent by drug

- Clinical Trial Success Rate Analysis & Data
  Likelihood of drug program advancement by disease.

- Curated Drug Revenues
  320 Drugs from 24 publicly reporting companies (curated)

- Competitive Company and Drug by Indication Time Series Data
  Profiles disease market participation over time

- Drugs / Active Ingredients Synonyms and International

- Nonproprietary Names (INNs)
  Mapping drug names across multiple sources.

- Pharmaceutical Market Company Names Ontology
  Mapping companies across multiple business entities.

- Epidemiology Information (Disease population size & impact)
  Estimating & comparing market size by disease.

- Drug Patents and Approval Event Files
  Detailed event data for approvals, exclusivity, and patents
PharmaKB Alpha Signals

Gain an investment edge.

Trading Drug Regulatory Signals

Model for trading drug regulatory event signals generates $350 million in capital accumulation, starting from a $1 million investment over 30 years.*

* Results are modeled on retrospective data and may vary in any future trades.
PharmaKB Case Studies

**Financial Analysis of Competitive Drugs**
A case study using PharmaKB to compare competing commercial drugs. Financial investors and pharmaceutical industry leaders utilize the information in PharmaKB to make superior investment and product development decisions...

*Read More*

**Method for Trend Based Forecasting of Drug Revenues**
A case study using PharmaKB to predict company revenues from key indicators of research and market performance...

*Read More*
Patent Cliff Analysis Support for Generic Drug Decisions
Patent termination events have a startling effect on company revenue. This case study shows FDA reported patent terminations for Rheumatoid Arthritis drugs and summarizes the timing of opportunities for generics companies to enter the market.:

Read More

Tools for Clinical Trials Success Forecasting
PharmaKB clinical trial data enables calculating the likelihood that a drug candidates will successfully advance through each clinical trial and approval stage:

Read More
**Estimating a Drug Program Net Present Value (NPV)**

A well-formed NPV (Net Present Value) analysis for a new potential drug can guide the overall assessed value of the drug program for licensing negotiations, acquisitions, or estimating future potential revenues. PharmaKB data includes relevant factors such as the disease population size, planned drug cost, the current stage of development of the new drug, probability of success, length of clinical trials, and the number of competitive drugs for the disease...

**Tracking Trends and Revenue (Cancer Drugs)**

A case study using PharmaKB data to explore trending cancer therapies for multiple myeloma and their impact on revenues of existing treatment regimens. Overall, this case study demonstrates how PharmaKB can be used to investigate changes to the treatment landscape for a particular disease...
Find us on the web at:
www.pharmakb.com

Contact the PharmaKB Team at:
info@pharmakb.com