

Introducing



The Pharmaceutical Knowledgebase

from [Collaborative Drug Discovery, Inc.](http://www.collaborative-drug.com)

pharmakb.com

info@pharmakb.com





Overview



Analyze



Invest



Manage



Daily

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

1300+

(Competitive Markets)

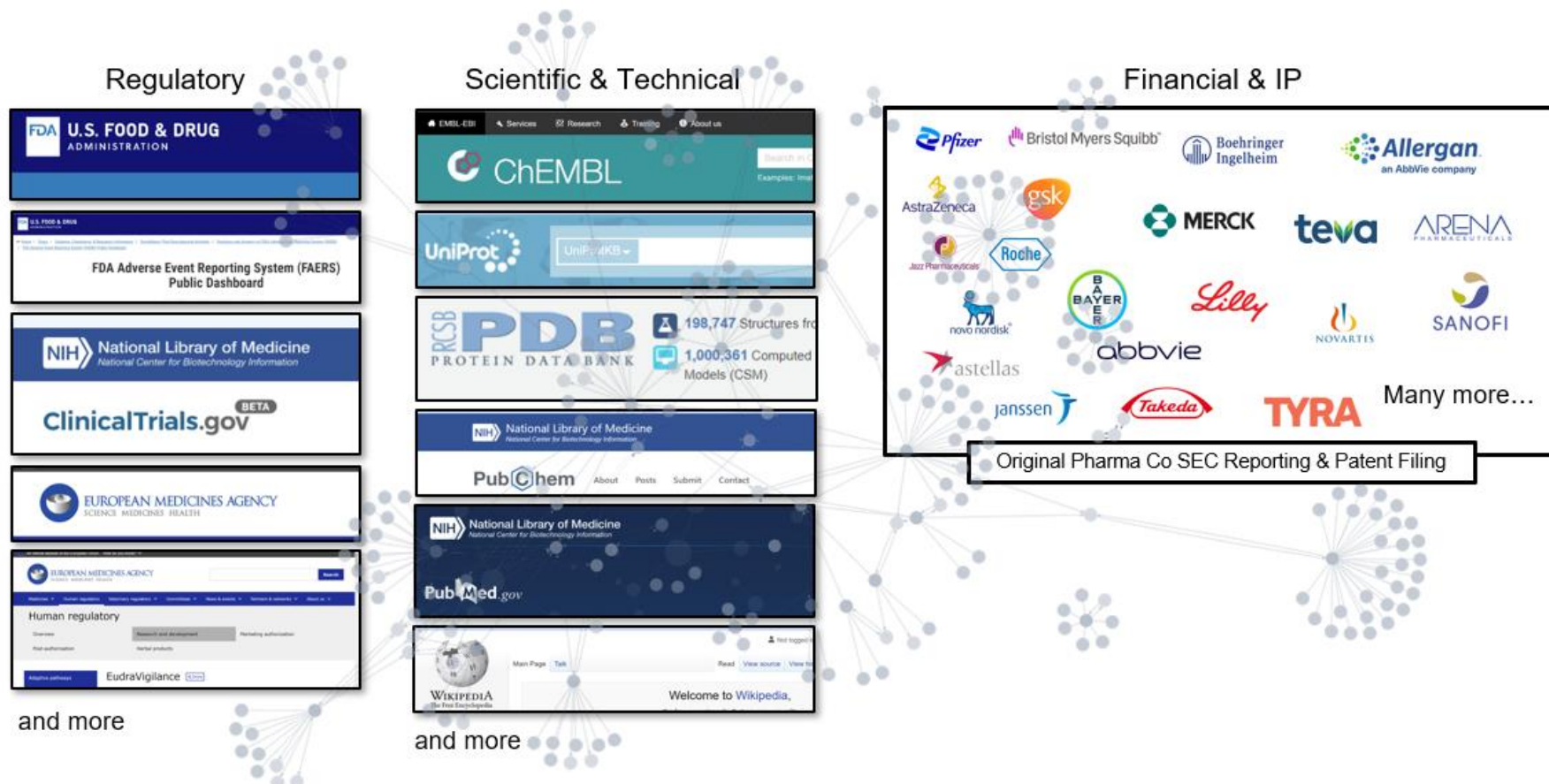


Drugs

9770+

(Products)

PharmaKB collects and curates information
from 100's of sources **Updated Daily!**

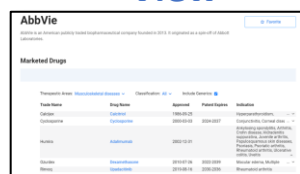


Access Content via 3 Methods

Web Application

(Dashboards & File Downloads)

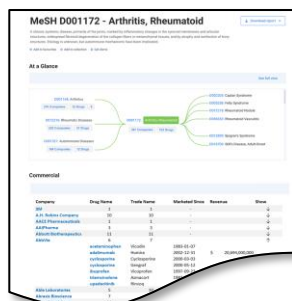
Company View



Drug View



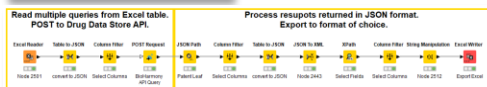
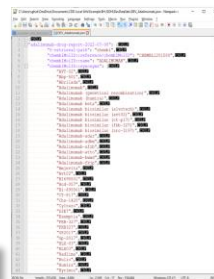
Disease View (competitive landscape)



API Access

(All Data)

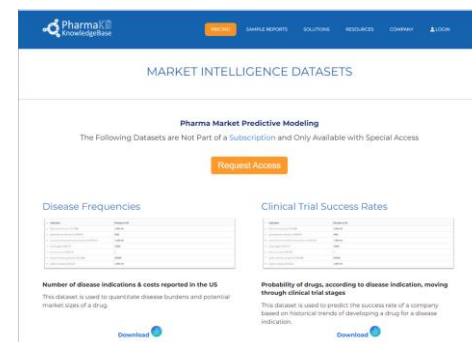
GraphiQL



Custom Data Portal

(PharmaKB+)

Market Intelligence & Modeling Datasets (Github or S3)



Web Application

(Dashboards & File Downloads)

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)

Company View: Review Portfolios

AbbVie

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

☆ Favorite

Marketed Drugs

Therapeutic Areas: Musculoskeletal diseases Classification: All Include Generics: ☒

Trade Name	Drug Name	Approved	Patent Expires	Indication
Calcelex	Calcitriol	1986-09-25		Hyperparathyroidism, ...
Cyclosporine	Cyclosporine	2000-03-03	2024-2037	Conjunctivitis, Corneal dise...
Humira	Adalimumab	2002-12-31		Ankylosing spondylitis, Arthritis, Crohn disease, Hidradenitis suppurativa, Juvenile arthritis, Papulosquamous skin disease, Psoriasis, Psoriatic arthritis, Rheumatoid arthritis, Ulcerative colitis, Uveitis
Ozurdex	Dexamethasone	2010-07-26	2022-2039	Macular edema, Multiple ...
Rinvoq	Upadacitinib	2019-08-16	2030-2036	Rheumatoid arthritis

Disease View: Search by Competitors


MeSH D001172 - Arthritis, Rheumatoid

A chronic systemic disease, primarily of the joints, marked by inflammatory changes in the synovial membranes and articular structures, widespread fibrinoid degeneration of the collagen fibers in mesenchymal tissues, and by atrophy and rarefaction of bony structures. Etiology is unknown, but autoimmune mechanisms have been implicated.

[Add to favourites](#)
[Add to collection](#)
[Get Alerts](#)

At a Glance

See full view



Commercial

Company	Drug Name	Trade Name	Marketed Since	Revenue	Show
3M	1	1	-		↓
A.H. Robins Company	10	10	-		↓
AACE Pharmaceuticals	1	1	-		↓
AAIPharma	3	3	-		↓
Abbott Biotherapeutics	11	11	-		↓
AbbVie	6	7			↑
	acetaminophen	Vicodin	1983-01-07		
	adalimumab	Humira	2002-12-31	\$ 20,694,000,000	
	cyclosporine	Cyclosporine	2000-03-03		
	cyclosporine	Gengraf	2000-05-12		
	ibuprofen	Vicoprofen	1997-09-23		
	triamcinolone	Azmacort	1983-01-07		
	upadacitinib	Rinvoq			
Able Laboratories	5	10			
Abraxis Bioscience	7				
Healthcare	14				

Drug View: Detailed Product Profiles

Humira, Trudexa (adalimumab)

Abirrada, Amjevita, Cytezo, Hadlima, Halimatoz, Hulo, Humira, Hyrimoz, Idar, an antibody pharmaceutical. Adalimumab was first approved as Humira on 2 disease, hidradenitis suppurativa, juvenile arthritis, and psoriatic arthritis and

COVID-19 Top 200 Pharmaceuticals by Retail Sales

Commercial Clinical Drug Target

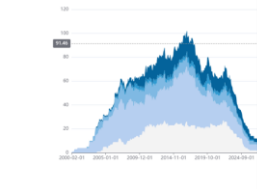
Commercial

Therapeutic Areas

Therapeutic Area	MeSH
Infections	D007239
musculoskeletal diseases	D009140
digestive system diseases	D004066
eye diseases	D005128
skin and connective tissue diseases	D017437
immune system diseases	D007154

Trials

440 clinical trials View more details





Indications Phases 4

Indication	MeSH	Ontology
Rheumatoid arthritis	D001172	EPD_000004
Crohn disease	D003424	EPD_000004
Psoriasis	D011985	EPD_000004
Hidradenitis colitis	D000000	EPD_000004

Financial

humira - AbbVie Inc.

Tabular view

Easily
Navigate

Web Application

(Dashboards & File Downloads)

Disease View:

Browse the competitive landscape for companies with commercial or trial drugs that target the same disease markets

MeSH D001172 - rheumatoid arthritis

[☆ Favorite](#)

Competitive landscape

[See full view](#)


Commercial

Company Name	Drug Name	Trade Name	Patent Expires	Approval Date	Revenue	Period
3M	PHENYLEPHRINE	Duo-medihaler		2023-03-09		
A.H. Robins Company	CHLORPHENIRAMINE	Chlorpheniramine		2017-06-09		
	DEXTROMETHORPHAN	Dimetane-dx		2022-08-18		
	PSEUDOEPHEDRINE	Dimetane-dx		2023-03-10		
	PHENYLEPHRINE	Duo-medihaler		2023-03-09		

Clinical Trials

Therapeutic Areas: All Classification: All Approval: All Status: All Phases: All						
Company name	Phase 1	Phase 2	Phase 3	Phase 4	Drug Name	
3M			●	●	Phenylephrine	
A.H. Robins Company	●	●	●	●	Diphenhydramine,Hydrocortisone,Leucovorin,Methylprednisolone	

[See Live Preview...](#)

<https://www.pharmakb.com/sample-data#disease-report>

Web Application

(Dashboards & File Downloads)

Company View:

Browse individual drug revenues for companies and track historical and developing drugs through clinical trials.

AbbVie

★ Favorite

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

Marketed Drugs

Therapeutic Areas: [All](#) ▾

Classification: [All](#) ▾

Include Generics: ☒

Trade Name	Drug Name	Approved	Patent Expires	Indication
Acular	Ketorolac tromethamine	1992-11-09		—
Acuvail	Ketorolac tromethamine	2009-07-22		—
Acyclovir	Acyclovir	1999-07-26	2027-2030	Aids-related opportunistic infections, ... ▾

Revenue by Drug [®]

Quarterly Annual

Creon



Humira



Kaletra



Clinical Trials

Therapeutic Areas: [All](#) ▾

Classification: [All](#) ▾

Approval: [All](#) ▾

Status: [All](#) ▾

Phases: [All](#) ▾

Drug Name	Phase 1	Phase 2	Phase 3	Phase 4	Indication
Abatacept			●	●	Psoriatic Arthritis, Rheumatoid Arthritis, Spondylarthritis, Rheum ▾
AbbV-744	●	●			Sjogren's Syndrome (SS), Ulcerative Colitis (UC), Acute Myeloid L ▾

[See Live Preview...](#)

<https://www.pharmakb.com/sample-data#company-report>

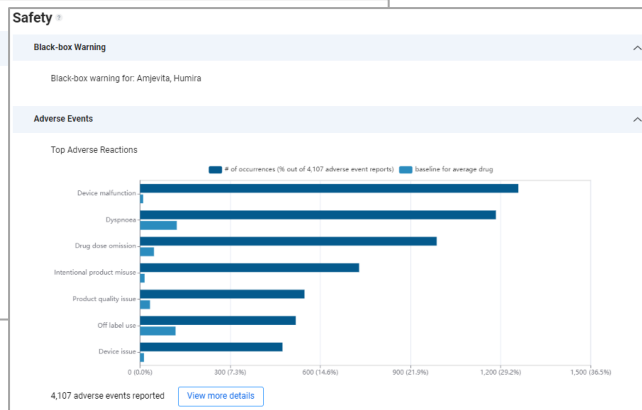
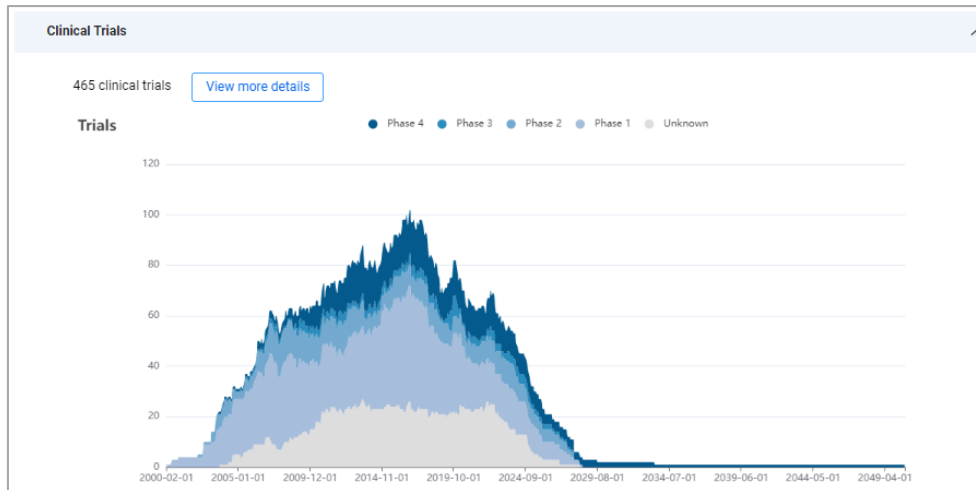
Web Application

(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>



Humira, Trudexa (adalimumab)

[Download report](#) [Favorite](#)

Amjevita, Cyltezo, Hadlima, Hulio, Humira, Hyrimoz, Idacio, Yusimry (adalimumab) is an antibody pharmaceutical. Adalimumab was first approved as Humira on 2002-12-31. It is used to treat ankylosing spondylitis, crohn disease, hidradenitis suppurativa, juvenile arthritis, and psoriatic arthritis amongst others in the USA. It has been approved in Europe to treat ankylosing spondylitis, arthritis, croh ... [More](#)

[COVID-19](#) [Top 200 Pharmaceuticals by Retail Sales](#)

Commercial Clinical Drug Target Variants Financial Trends Safety

Commercial

Therapeutic Areas

Therapeutic Area	MeSH
infections	D007239
musculoskeletal diseases	D009140

Trade Name [FDA](#) [EMA](#)

Amjevita, Cyltezo, Hadlima, Hulio, Humira, Hyrimoz, Idacio, Yusimry (discontinued: Abridada)

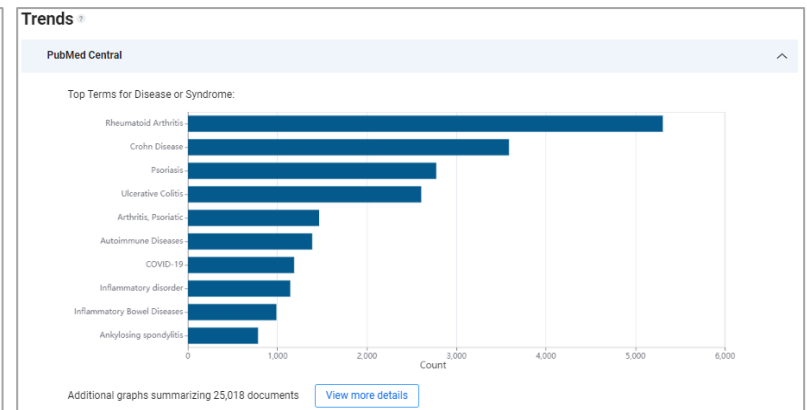
Drug Products [FDA](#) [EMA](#)

[Reference product - 351\(a\)](#) [Interchangeable product - 351\(k\)](#) [Biosimilar product - 351\(k\)](#)

Adalimumab

Tradename	Proper name	Company	Number	Date	Products
Humira	adalimumab	AbbVie	N-125057 RX	2002-12-31	9 products

[Show 1 discontinued](#)





API Access

(All Data)

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

Browse [PharmaKB API Documentation](https://www.pharmakb.com/api-documentation). <https://www.pharmakb.com/api-documentation>

GraphiQL ▶ Prettify Merge Copy History < Docs

```
1 # Welcome to GraphiQL
2 #
3 # GraphiQL is an in-browser tool for writing, validating, and
4 # testing GraphQL queries.
5 #
6 # Type queries into this side of the screen, and you will see intelligent
7 # typeheads aware of the current GraphQL type schema and live syntax and
8 # validation errors highlighted within the text.
9 #
10 # GraphQL queries typically start with a "{" character. Lines that start
11 # with a # are ignored.
12 #
13 # An example GraphQL query might look like:
14
15 {
16   drugs(search: "humira") {
17     result{
18       commonInfo{commonName, classification}
19       commercialInfo{fda{indications{name}, drugProducts{tradeName,properName}}}
20     }
21   }
22 }
23
24
25
26
```

```
{
  "data": {
    "drugs": {
      "result": [
        {
          "commonInfo": {
            "commonName": "ADALIMUMAB",
            "classification": "Antibody"
          },
          "commercialInfo": {
            "fda": {
              "indications": [
                {
                  "name": "ankylosing spondylitis"
                },
                {
                  "name": "crohn disease"
                },
                {
                  "name": "hidradenitis suppurativa"
                },
                {
                  "name": "juvenile arthritis"
                },
                {
                  "name": "psoriatic arthritis"
                },
                {
                  "name": "rheumatoid arthritis"
                },
                {
                  "name": "ulcerative colitis"
                },
                {
                  "name": "uveitis"
                }
              ],
              "drugProducts": [
```



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**

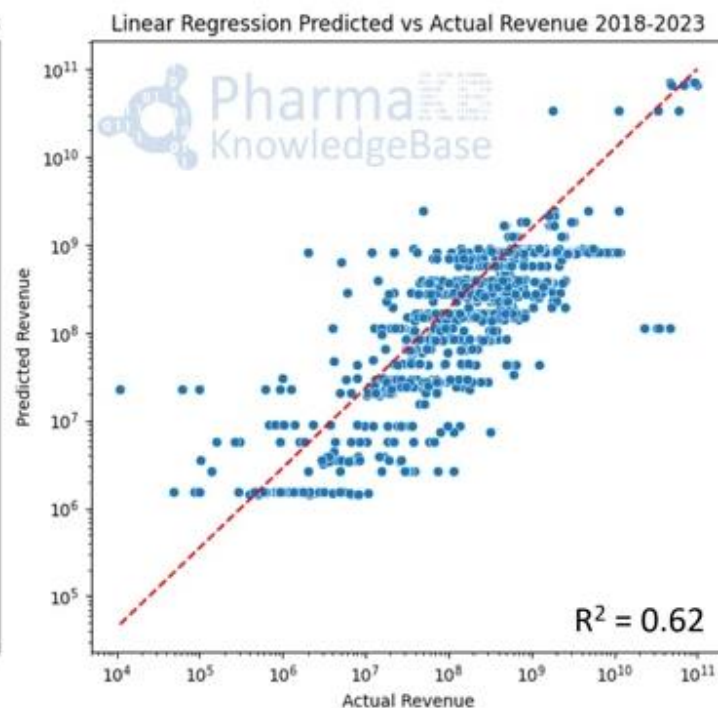
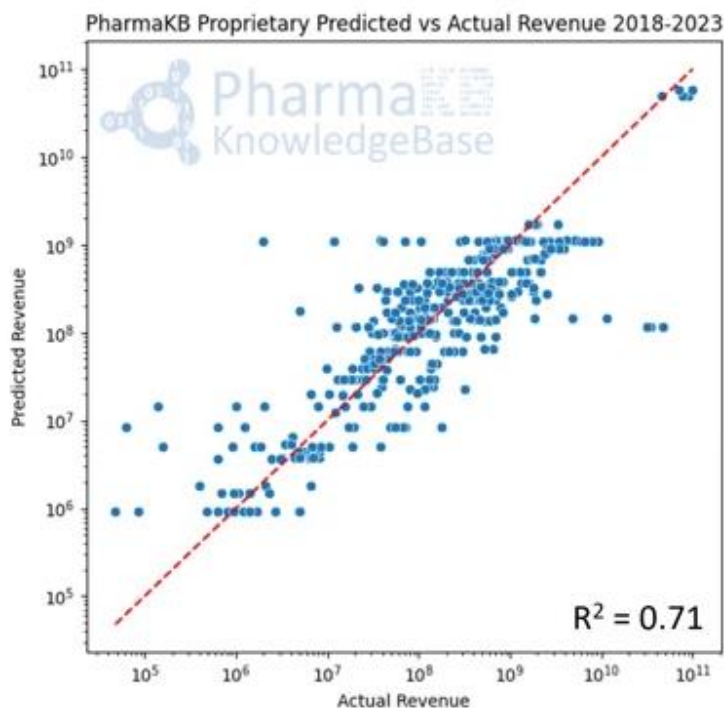
Detailed event data for approvals, exclusivity, and patents

PharmaKB Alpha Signals

Gain an investment edge.

Signal #1 - Improved Drug Revenue Prediction

PharmaKB data is used to build an improved model (left panel) for predicting drug revenues.*

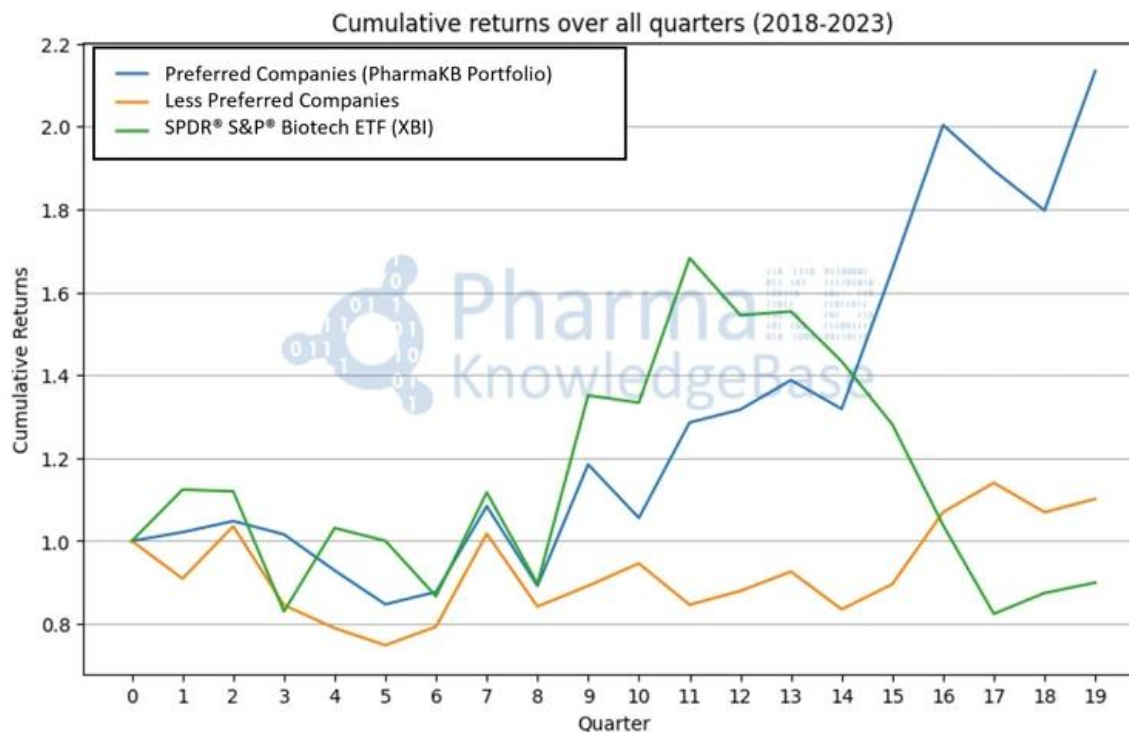


PharmaKB Alpha Signals

Gain an investment edge.

Signal #2 - Portfolio Building with Alternative Drug Data

Alternative drug data provides a signal to build a biotech portfolio with higher performing cumulative revenues than less preferred companies and a Biotech ETF (XBI).*



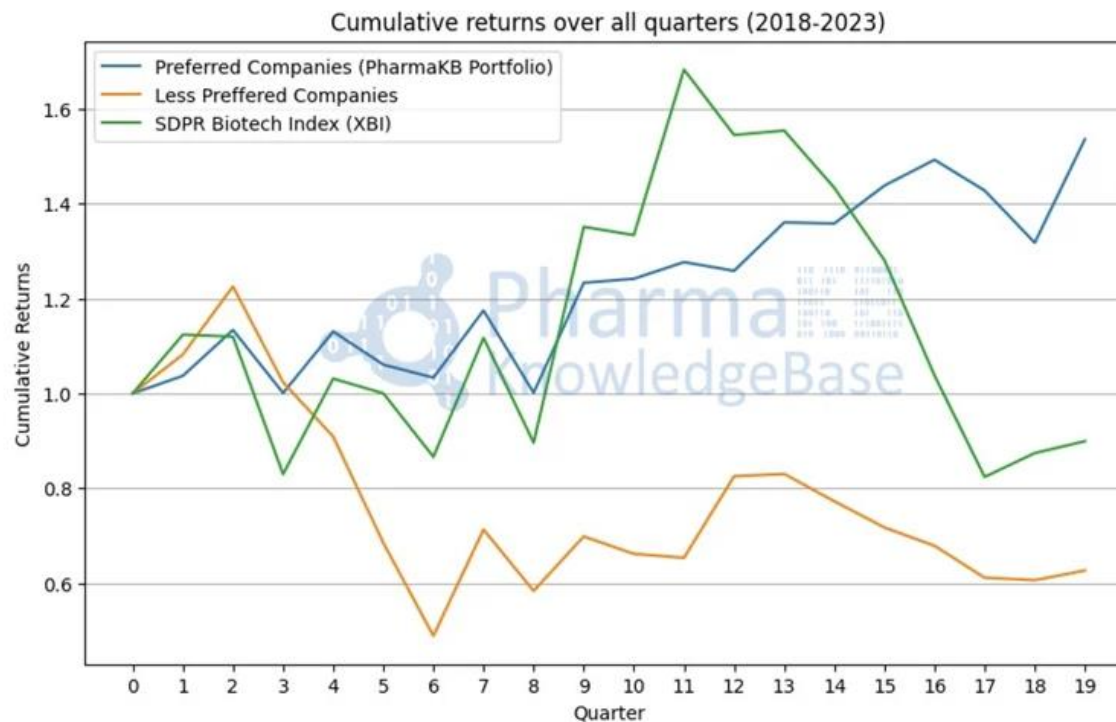
* Results are based on retrospective data and may vary in any future trades.

PharmaKB Alpha Signals

Gain an investment edge.

Signal #3 - Portfolio Building with Alternative Drug Data

Alternative drug data provides a signal to build a biotech portfolio with higher performing cumulative revenues than less preferred companies and a Biotech ETF (XBI).*



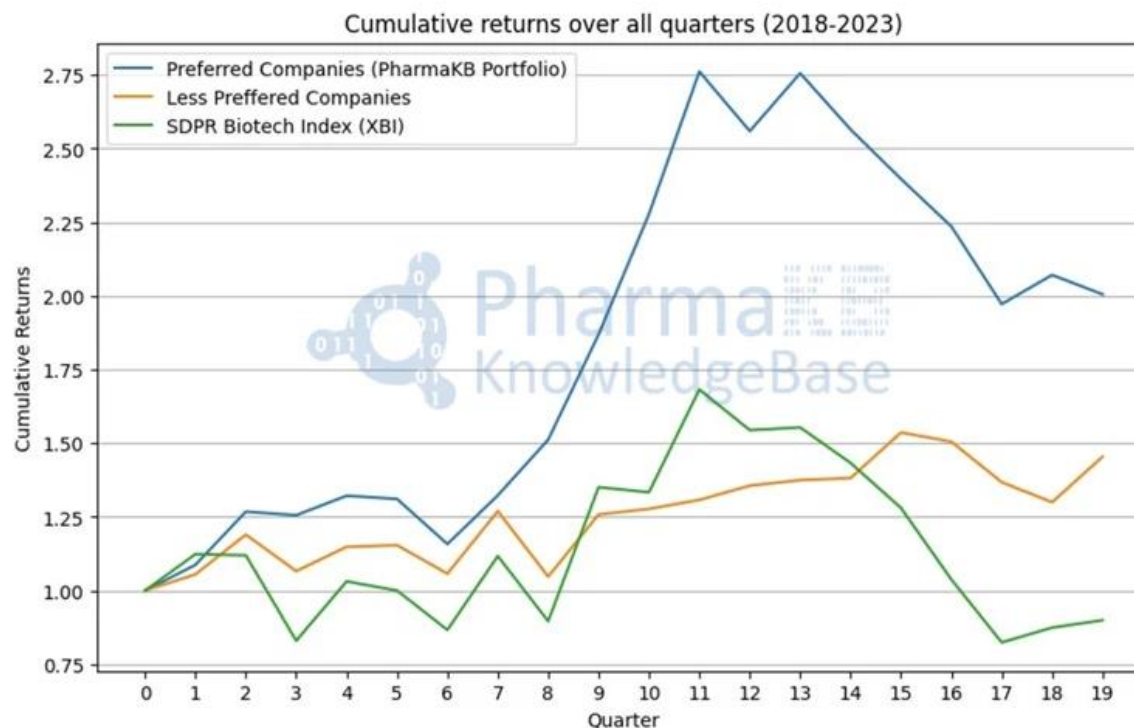
* Results are based on retrospective data and may vary in any future trades.

PharmaKB Alpha Signals

Gain an investment edge.

Signal #4 - Portfolio Building with Alternative Drug Data

Alternative drug data provides a signal to build a biotech portfolio with higher performing cumulative revenues than less preferred companies and a Biotech ETF (XBI).*



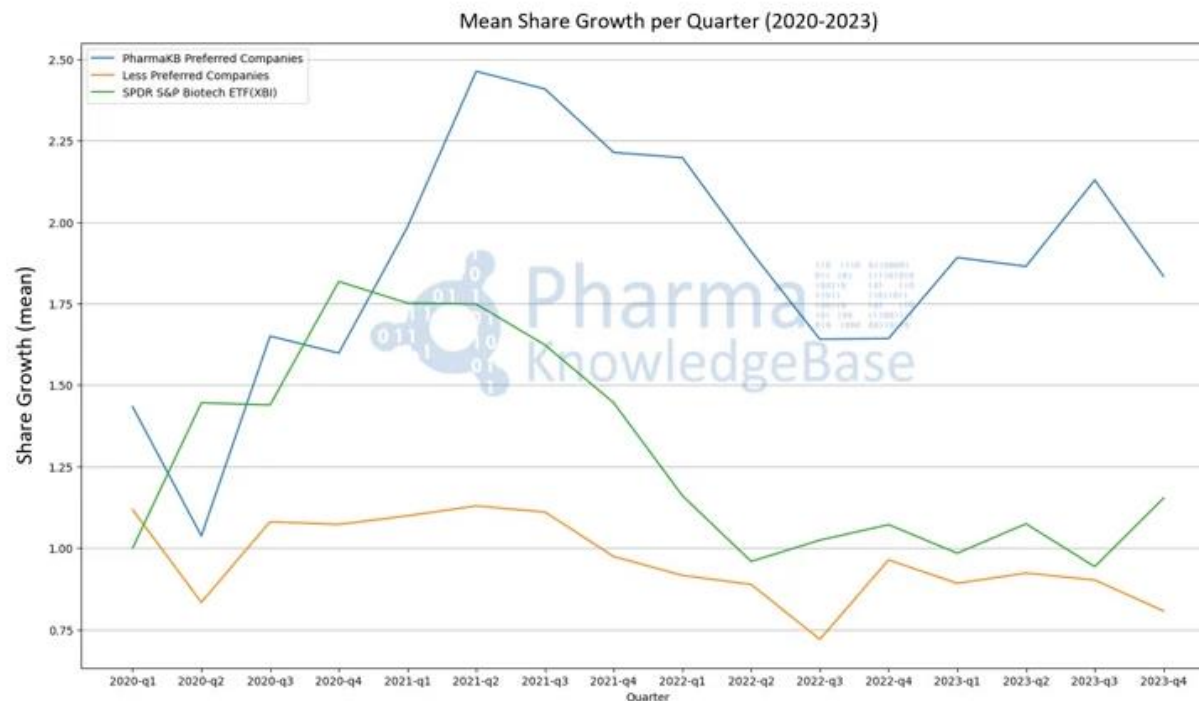
* Results are based on retrospective data and may vary in any future trades.

PharmaKB Alpha Signals

Gain an investment edge.

Signal #5 - Predicting Market Shares

Alternative drug data provides a signal to build a biotech portfolio to select companies with higher predicted share growth than less preferred companies and a Biotech ETF (XBI).*



* Results are based on retrospective data and may vary in any future trades.

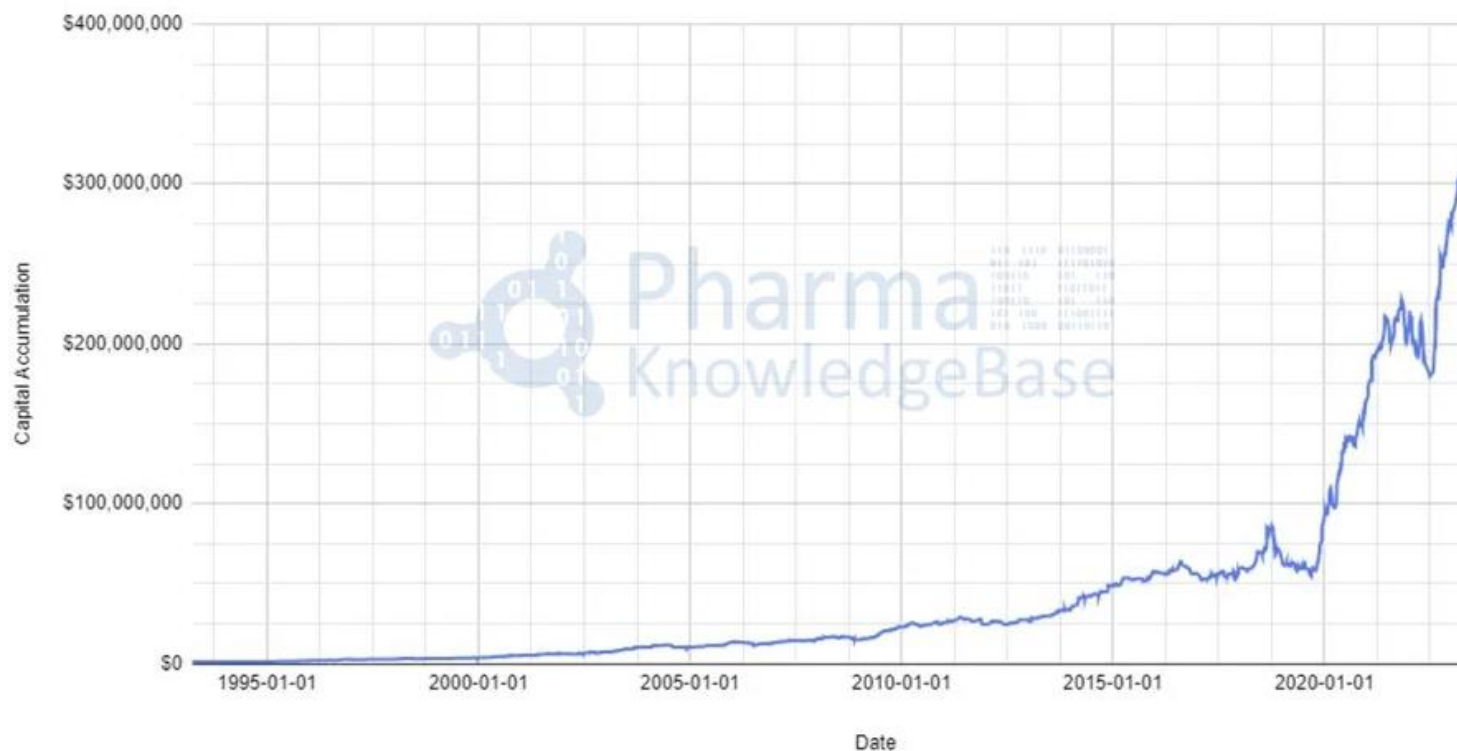
PharmaKB Alpha Signals

Gain an investment edge.

Signal #6 - 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.*

Capital Accumulation Beginning from a \$1 Million Investment



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



PharmaKB Alpha Signals

Gain an investment edge.

Signal #7 - Created by Althub (3rd Party) using PharmaKB

Althub (3rd Party) uses a PharmaKB signal to build a biotech portfolio (yellow) with higher returns than the IBB Biotech ETF (orange).*

As of Date : 2023-09-27

Portfolio Performance (All) ▲ 86.96%

186.96

iShares Nasdaq Biotechnology ...

Alpha

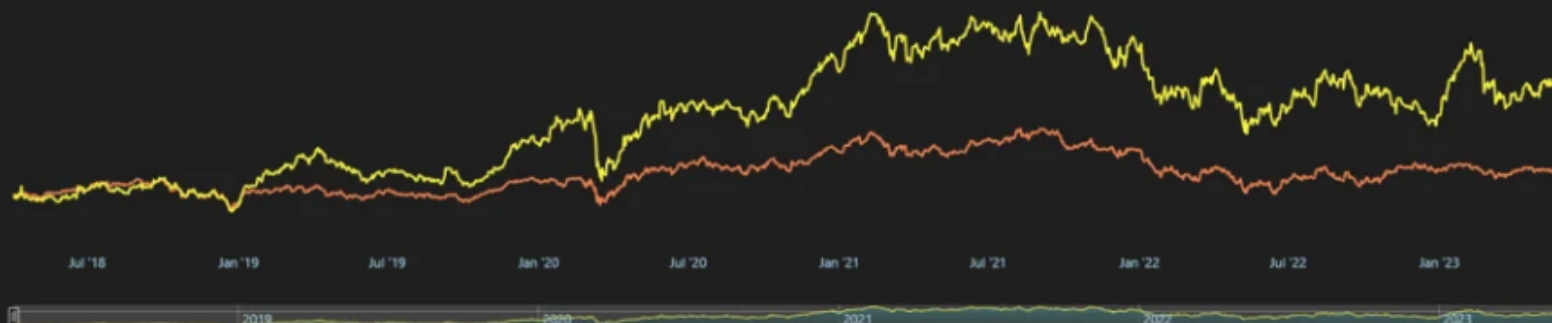
● 7.35%

Beta

● 1.14

R-Squared

● 0.57



— iShares Nasdaq Biotechnology ETF (IBB)

Performance

▲ **12.08%**
CAGR

Last 1M

● -6.20 %

Last 3M

● -13.98 %

Volatility

▲ **36.66%**
Daily (Annualised)

Monthly (Annualised)

● 37.77 %

Yearly

● 39.84 %

Sharpe Ratio

▲ **0.48**
Daily (Annualised)

Monthly (Annualised)

● 0.50

Yearly

● 0.52

Sortino Ratio

▲ **0.81**
Daily (Annualised)

Monthly (Annualised)

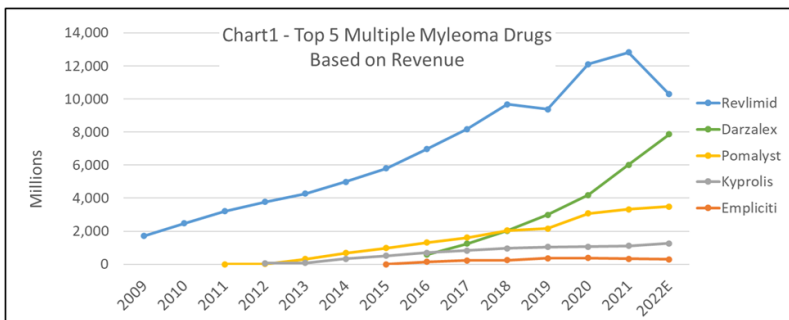
● 1.06

Yearly

● 1.77

* Results are based 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](#)



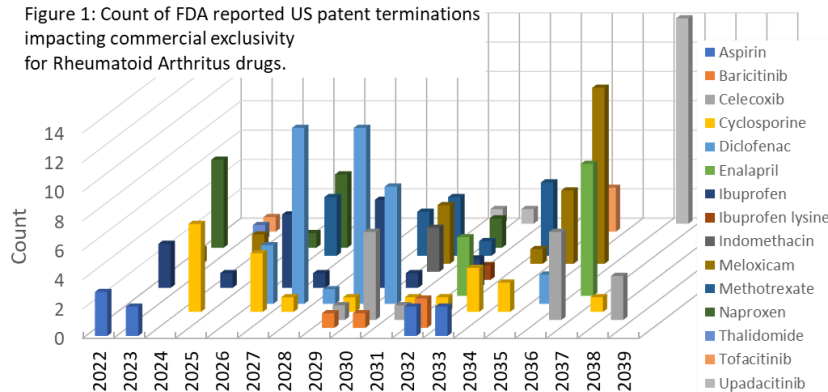
Method for Trend Based Forecasting of Drug Revenues

A case study using PharmaKB to predict company revenues from key indicators of research and market performance...

[Read More](#)

PharmaKB Case Studies

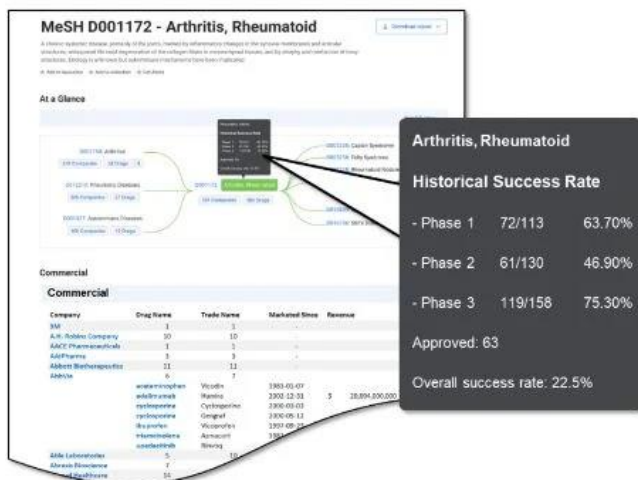
Figure 1: Count of FDA reported US patent terminations impacting commercial exclusivity for Rheumatoid Arthritis drugs.



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](#)

PharmaKB Case Studies

$$NPV = \sum_{t=1 to T} \frac{R_t}{(1+i)^t}$$

R_t = net cash flow at time t
 i = Discount Rate
 T = time of cash flow

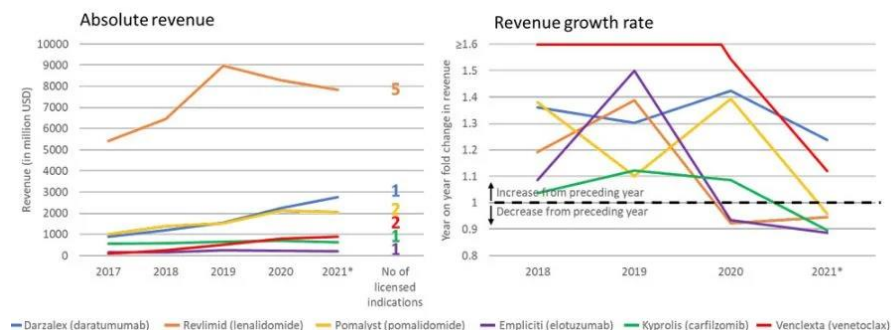
$$R = \frac{(\text{Annual Patient Spend}) \times (\text{US Patient Count})}{(\text{Marketed Drug Count})}$$

T = Time to complete clinical trials plus any remaining patent life.

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...

[Read More](#)



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...

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