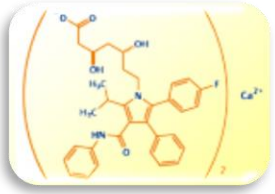
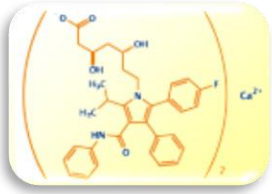


Pharmaceutical Substances (Kleemann/Engel)
Approved APIs in Focus
https://pharmaceutical-substances.thieme.com/ps/



Pharmaceutical Substances – a one-stop source of information relating to the industrial synthesis and commercial applications of every licensed drug of significance.

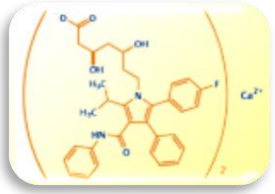
Concise format of entries: diverse information presented in brief 'handy' records (great for class handouts).

Focus on industrial chemistry – prepares students for industry / real-life applications of research.

Focuses on information of interest to scientists as opposed to pipeline databases that are orientated towards business needs & clinical trials

Patents are written to be confusing and protective. We have done the difficult and time-consuming job of figuring out the synthetic route used in practice.

No other resource covers the industrial synthesis of licensed drugs in such a focused fashion.



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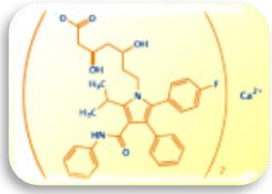
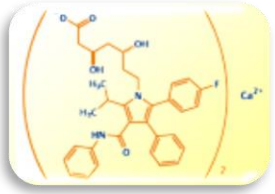


Find out more about why Pharmaceutical Substances is essential for Teaching:

- ✓ Commercial applications of organic synthesis in pharmaceutical industry
- ✓ Importance of certain reactions and areas of research in drug development
- ✓ A rapid overview of a therapeutic area or chemically related substances
- ✓ Synthetic chemistry on bulk scales (reactions that work when scaled-up)
- ✓ Importance of information in patents and comparison with primary literature
- ✓ Insights into the pharmaceutical industry – preparing students for entry into industry
- ✓ Identification of marketed drugs relating to a structure
- ✓ For pharmacy/pharmacology depts.: Provides basic chemistry behind drugs without going into too much detail

> ""I love Kleemann/Engel [Pharmaceutical Substances] because it helps me prepare for classes, in particular on synthetic design."
> Prof. Dirk Trauner, New York University



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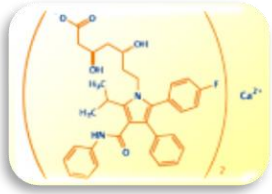
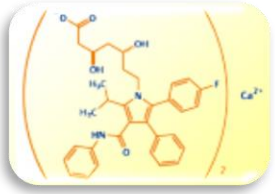


Find out more about why Pharmaceutical Substances is essential for Research:

- ✓ Industrial synthetic routes discerned from complex patent descriptions
- ✓ Unique source of reactions that perform on an industrial scale
- ✓ First determination of the market size & competition for an API - essential for development of new and generic pharmaceuticals
- ✓ Patent information including approval date and expiration
- ✓ Comprehensive coverage of older APIs and substances approved worldwide
- ✓ Merger and acquisition tracking ensuring that vendor information is up-to-date in a rapidly changing industry

"I appreciate the detailed reaction schemes which inform me on how every drug on the market can be made and the detailed references to not only the published literature but to patents."

Dr. Trevor Laird



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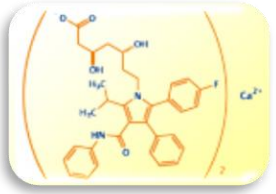
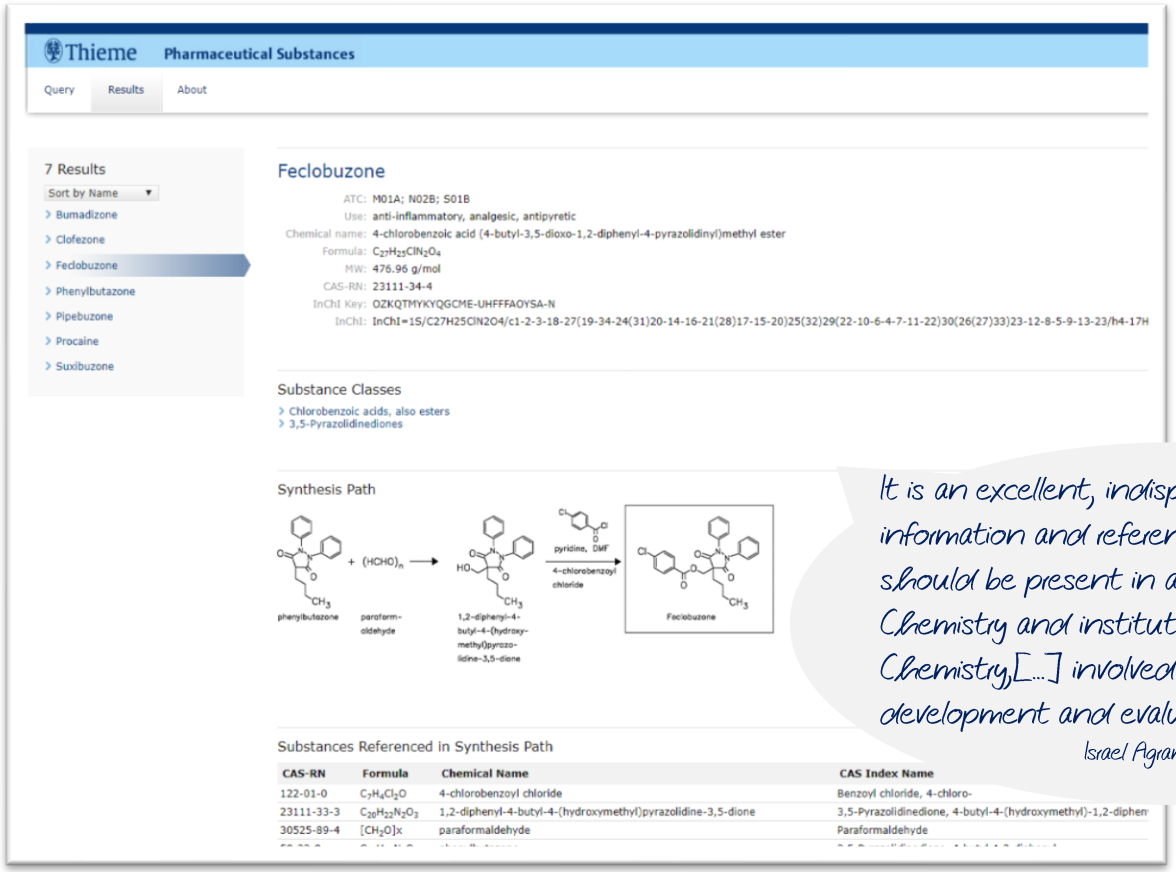
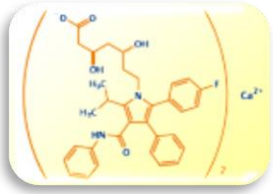




It is an excellent, indispensable source of information and reference guide of drugs, which should be present in all departments of Medicinal Chemistry and institutes of Pharmaceutical Chemistry,[...] involved in the design, discovery, development and evaluation of drugs.

Israel Agranat, Imperial College



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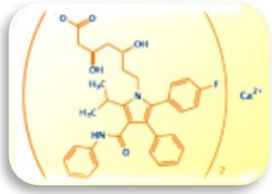

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