



ELSEVIER

Elsevier Life Science Solution 获取药物研发信息系列主题培训

俞靓 (Sam Yu)

Elsevier Life Science Customer Consultant

Mail: S.yu.2@Elsevier.com

Phone: 18930408012



Agenda

- 7月8日
 - 15: 00-15: 10: Elsevier Life Science整体解决方案介绍
 - 15: 10-16: 30: 物质结构/合成信息的获取与精炼
- 7月15日
 - 15: 00-16: 00: 生物活性数据与文献的获取与提炼
- 7月22日
 - 15: 00-16: 00: 药物毒理药理学文献的获取
- 7月29日
 - 15: 00-16: 00: Elsevier Life Science整体解决方案数据库使用答疑
- 8月5日
 - 15: 00-16: 00: 如何将Elsevier Life Science整体解决方案贯穿药物研发的全流程



ELSEVIER

药物毒理药理文献的获取

涉及：RMC, Embase, PharmaPendium



Agenda

- 涉及具体结构的毒性数据的获取
- 涉及具体药物（上市，临床）的毒理药理文献的获取
- FDA/EMA审评文档中独立药理信息的获取与对比

RMC (Reaxys Medicinal Chemistry)

- RMC是建立在Reaxys平台上的，和药物化学数据有关的数据库。
 - 包含真实的，实验确证的，小分子化合物在不同生物体系中的相关实验数据
 - 是市场上最全的，最广泛的小分子生物活性数据库
 - 实验数据源自对学术全文，专利中的相关数据的摘取，以及来自GOSTAR数据库的相关数据，并将二者在底层数据上进行整合。
 - RMC中所提供的文献，包含所有摘录的相关信息和数据，可靠，可信

Patents Origin and starting date

- **>126 600 Patents**
- US : 1971-present
- EP : 1979-present
- WO : 1978-present (English only)
- Patents are coming from the A61K class mainly but not only.

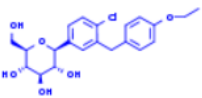
Articles and Journals

- **>5000 Journals Covered**
- **>353 400 Articles**
- From 1980 to Present

Drugable Targets

- **>12 700 Drugable Targets**

Case 1: 单一化合物生物活性数据的获取



1

dapagliflozin
C₂₁H₂₅ClO₆ 408.879 11966426 461432-26-8

Identification
Druglikeness
Bioactivity (All)

Physical Data - 52
Spectra - 54
Other Data - 351

Preparations - 81 >
Reactions - 398 >
Targets - 24 >
Documents - 217 >

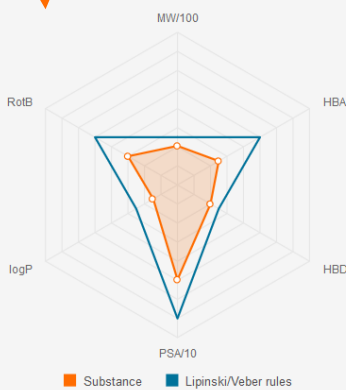
Druglikeness

Lipinski rules component

Molecular Weight	408.879
logP	2.937
HBA	5
HBD	4
Matching Lipinski Rules	4

Veber rules component

Polar Surface Area (PSA)	99.38
Rotatable Bond (RotB)	6
Matching Veber Rules	2



Legend: Substance (orange), Lipinski/Veber rules (blue)

Bioactivity (All)

- ✓ In vitro: Efficacy - 261
- ✓ In vivo: Animal Model - 208
- ✓ Metabolism - 67
- ✓ Pharmacokinetic - 229
- ✓ Toxicity/Safety Pharmacology - 114

具体化合物的生物活性数据

^ Bioactivity (All)

- ✓ [In vitro: Efficacy - 261](#)
- ✓ In vivo: Animal Model - 208
- ✓ Metabolism - 67
- ✓ Pharmacokinetic - 229
- ✓ Toxicity/Safety Pharmacology - 114

RMC将全文中的数据全部提炼出来，同时对于用Mol为单位的数据进行标准化处理：
 $pX = -\lg(\sim\text{mol})$

[^ In vitro: Efficacy - 261](#)

Quantitative Results

Show/Hide columns

pX	Parameter	Value (qual)	Value (quant)	Unit	Biological Species	Action on target	Target	Tissue/Organ	Cell	Dose	Effect	Concomitants	Reference
9.91	amount (Glycogen)		50 - 175	pg/ml	Sprague Dawley rat			pancreas		20 μmol/l	antidiabetic agent		Wang, May-Yun; Yu, Xinxi; Lee, Young; McCorkle, Sara Kay; Chen, Shihwei; Li, Jianping; Wang, Zhao V.; (...) Unger, Roger H.; Roth, Michael G [<i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, vol. 114, # 25, p. 6611 - 6616] Full Text ↗ Cited 10 times ↗ Details > Abstract >
9.84	pIC50 ([14C]Methyl-Alpha-D-Glucopyranoside Uptake)		9.84		human		Sodium/glucose cotransporter 2 [human]Wild		COS-7 cell line			Radioligand: [14C]AMG	Ho, Low-Tone; Kulkarni, Suvarn S.; Lee, Jinq-Chyi [<i>Current Topics in Medicinal Chemistry</i> , 2011, vol. 11, # 12, p. 1476 - 1512] Full Text ↗ Cited 9 times ↗ Details > Abstract >
9.84	pIC50		9.84		human		Sodium/glucose cotransporter 2 [human]Wild		COS-7 cell line			Radioligand: ALPHA-D-(U-14C)-GLUCOPYRANOSIDE; Other compound: NACL;	Zhou, Huiqiang; Danger, Dana P.; Dock, Steven T.; Hawley, Lora; Roller, Shane G.; Smith, Chari D.; Handlon, Anthony L [<i>JACS Medicinal Chemistry Letters</i> , 2010, vol. 1, # 1, p. 19 - 23] Full Text ↗ Cited 35 times ↗ Details > Abstract >
9.31	IC50	=	0.49	nM	human	Inhibitor	Sodium/glucose cotransporter 2 [human]Wild		CHO cell line				Lee, Suk Ho; Song, Kwang-Seop; Kim, Jong Yup; Kang, Misuk; Lee, Jun Sung; Cho, Seung-Hwan; Park, Hyun-Ju; Kim, Jeongmin; Lee, Jinhwa [<i>Bioorganic and Medicinal Chemistry</i> , 2011, vol. 19, # 19, p. 5813 - 5832] Full Text ↗ Cited 17 times ↗ Details > Abstract >
9.31	IC50	=	0.49	nM	human	Inhibitor	Sodium/glucose cotransporter 2 [human]Wild						Radioligand: [14C]Methyl-alpha-D-glucopyranoside Lee, Jinhwa; Kang, Suk Youn; Song, Kwang-Seop; Lee, Junwon; Lee, Sung-Han [<i>Bioorganic and Medicinal Chemistry</i> , 2010, vol. 18, # 16, p. 6069 - 6079] Full Text ↗ Cited 30 times ↗ Details > Abstract >
9.31	IC50 ([14C]Methyl-Alpha-D-Glucopyranoside Uptake)	=	0.49	nM	human		Sodium/glucose cotransporter 2 [human]Wild		CHO cell line				Ho, Low-Tone; Kulkarni, Suvarn S.; Lee, Jinq-Chyi [<i>Current Topics in Medicinal Chemistry</i> , 2011, vol. 11, # 12, p. 1476 - 1512] Full Text ↗ Cited 9 times ↗ Details > Abstract >
9.31	IC50	=	0.49	nM	human		Sodium/glucose cotransporter 2 [human]Wild		CHO cell line				Substrate: [14C]AMG Park, Eun-Jung; Kong, Younggyu; Lee, Jun Sung; Lee, Sung-Han; Lee, Jinhwa [<i>Bioorganic and Medicinal Chemistry Letters</i> , 2011, vol. 21, # 2, p. 742 - 746] Full Text ↗ Cited 10 times ↗ Details > Abstract >

具体化合物的毒性数据

^ Bioactivity (All)

✓ [In vitro: Efficacy - 261](#)

✓ In vivo: Animal Model - 208

✓ Metabolism - 67

✓ Pharmacokinetic - 229

✓ [Toxicity/Safety Pharmacology - 114](#)

^ [Toxicity/Safety Pharmacology - 114](#)

Quantitative Results

Show/Hide columns ▾

pX	Parameter	Value (qual)	Value (quant)	Unit	Biological Species	Cell	Dose	Effect	Reference
9.25	amount (immunoreactive active insulin)		0.23	ng/ml	Akita mouse		0.1 mg/kg		Hatanaka, Takashi; Ogawa, Daisuke; Tachibana, Hiromi; Eguchi, Jun; Inoue, Tatsuyuki; Yamada, Hiroshi; Takei, Kohji; Makino, Hirofumi; Wada, Jun [Pharmacology Research and Perspectives , 2016, vol. 4, # 4, art. no. E00239] Full Text ↗ Cited 24 times ↗ Details > Abstract >
5	inhibition rate	Active				Hep-G2 cell line	10 µM	antineoplastic agent	STEINBERG, Gregory; TSAKIRIDIS, Theos; VILLANI, Linda - WO2016/134486, 2016, A1 Full Text ↗ Details > Abstract >
4.88	amount		0.15	mg/dl	Akita mouse		0.1 mg/kg		Hatanaka, Takashi; Ogawa, Daisuke; Tachibana, Hiromi; Eguchi, Jun; Inoue, Tatsuyuki; Yamada, Hiroshi; Takei, Kohji; Makino, Hirofumi; Wada, Jun [Pharmacology Research and Perspectives , 2016, vol. 4, # 4, art. no. E00239] Full Text ↗ Cited 24 times ↗ Details > Abstract >
4.6	IC50 (of viable colonies)		25.02	µM		NCI-H1299 cell line	0.1 - 100 µM	antineoplastic agent	STEINBERG, Gregory; TSAKIRIDIS, Theos; VILLANI, Linda - WO2016/134486, 2016, A1 Full Text ↗ Details > Abstract >
4.52	inhibition rate (of viable colonies)	Active				A-549 cell line	30 µM	antineoplastic agent	STEINBERG, Gregory; TSAKIRIDIS, Theos; VILLANI, Linda - WO2016/134486, 2016, A1 Full Text ↗ Details > Abstract >
4.52	inhibition rate (of viable colonies)	Active				NCI-H1299 cell line	30 µM	antineoplastic agent	STEINBERG, Gregory; TSAKIRIDIS, Theos; VILLANI, Linda - WO2016/134486, 2016, A1 Full Text ↗ Details > Abstract >
4.52	inhibition rate	Active				PC-3	30 µM	antineoplastic agent	STEINBERG, Gregory; TSAKIRIDIS, Theos; VILLANI, Linda - WO2016/134486, 2016, A1 Full Text ↗ Details > Abstract >

所有数据都提供原文链接，以保证数据的真实性。

Agenda

- 涉及具体结构的毒性数据的获取
- 涉及具体药物（上市，临床）的毒理药理文献的获取
- FDA/EMA审评文档中独立药理信息的获取与对比

什么是Embase

Embase

收录超过8,200期刊 / 3,500万条文献记录！

其中超过 2,900
种期刊在
Medline未收录

包含100%的MEDLINE内容*



对药物、疾病和医疗器械进行深度索引，主题性检索词是MEDLINE的两倍之多



强大的检索功能和过滤器，帮助精确查找最相关的结果



独特的信息管理功能帮助研究人员储存和修改复杂的检索策略，并可以和其他研究人员分享检索策略



独有的超过300万条会议摘要，自2009年开始已经收录超过9000个会议期刊的文摘

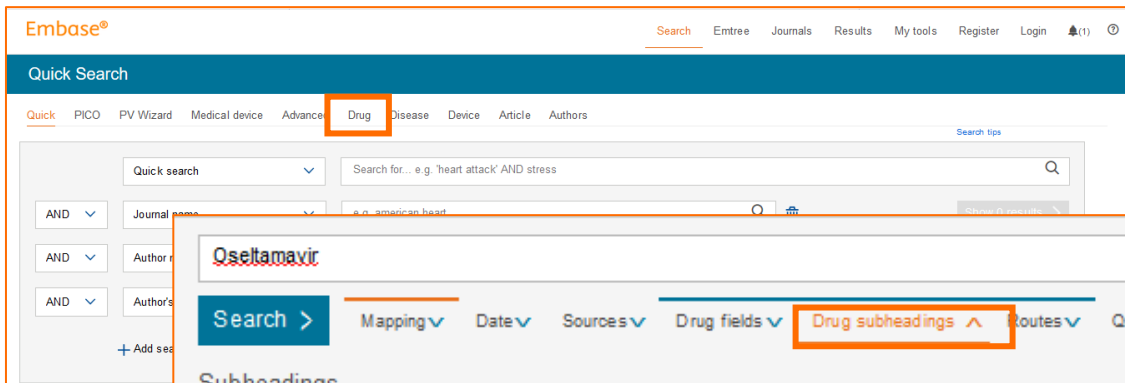


涵盖更多非英语类文献

Embase被众多国际性标准制定机构、研究机构推荐

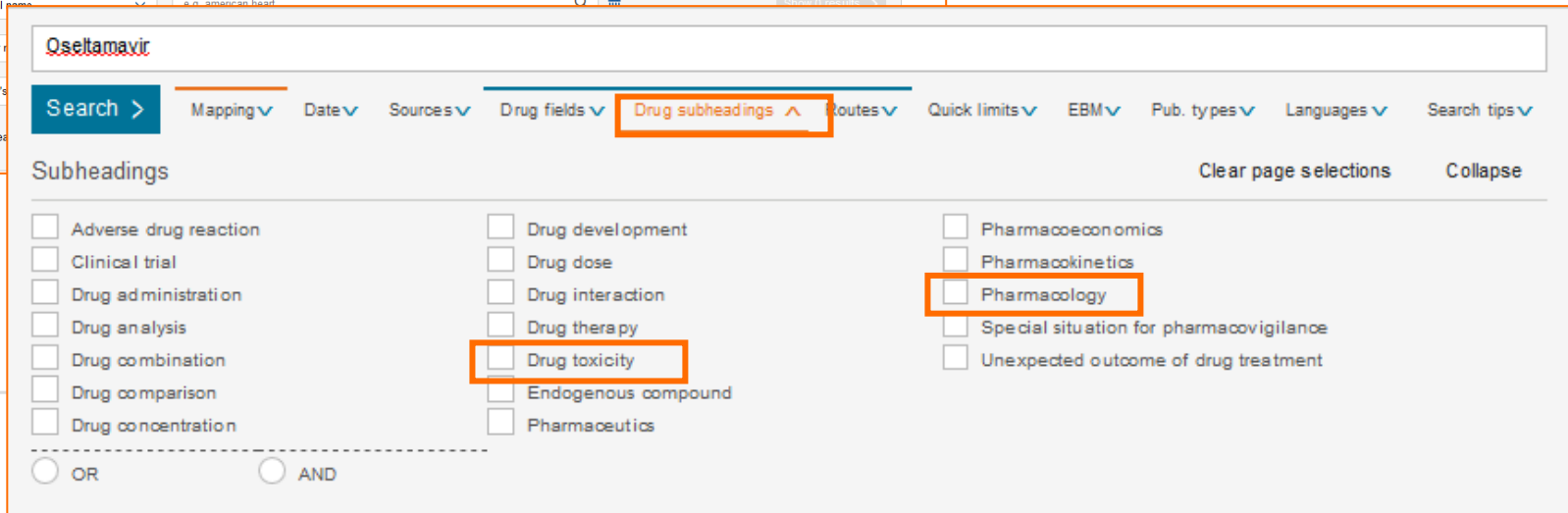
Case 2: 具体药物（上市，临床）的毒理药理文献获取

- Oseltamavir药理学文献的获取



The screenshot shows the Embase search interface. The 'Drug' filter is highlighted in the navigation menu. The search bar contains the text 'Search for... e.g. 'heart attack' AND stress'. The 'Drug subheadings' menu is open, showing a list of subheadings with checkboxes.

Embase中的文献分类工具，直接获取药理毒理文献。



The screenshot shows the 'Drug subheadings' menu in Embase. The search term 'Oseltamavir' is entered in the search bar. The 'Drug subheadings' menu is open, showing a list of subheadings with checkboxes. The 'Drug toxicity' and 'Pharmacology' subheadings are selected. The 'OR' and 'AND' radio buttons are visible at the bottom.

Subheading	Selected
<input type="checkbox"/> Adverse drug reaction	
<input type="checkbox"/> Clinical trial	
<input type="checkbox"/> Drug administration	
<input type="checkbox"/> Drug analysis	
<input type="checkbox"/> Drug combination	
<input type="checkbox"/> Drug comparison	
<input type="checkbox"/> Drug concentration	
<input type="checkbox"/> Drug development	
<input type="checkbox"/> Drug dose	
<input type="checkbox"/> Drug interaction	
<input type="checkbox"/> Drug therapy	
<input checked="" type="checkbox"/> Drug toxicity	
<input type="checkbox"/> Endogenous compound	
<input type="checkbox"/> Pharmaceutics	
<input type="checkbox"/> Pharmacoeconomics	
<input type="checkbox"/> Pharmacokinetics	
<input checked="" type="checkbox"/> Pharmacology	
<input type="checkbox"/> Special situation for pharmacovigilance	
<input type="checkbox"/> Unexpected outcome of drug treatment	

Embase中关于Oseltamavir的Pharmacology文献

The screenshot shows the Embase search results interface. At the top, the search query is 'oseltamavir/exp/dd_pd'. Below the search bar, there are various filters and options. The results section shows 975 results for search #1. Three results are visible:

- Result 1:** Effect of combination antiviral therapy on hematological profiles in 151 adults hospitalized with severe coronavirus disease 2019. Authors: Li X, Yang Y, Liu L, Yang X, Zhao X, Li Y, Ge Y, Shi Y, Lv P, Zhang J, Bai T, Zhou H, Luo P, Huang S. *Pharmacological Research* 2020 160 Article Number 105036. Options: Embase, MEDLINE, Abstract, Index Terms, View Full Text, Similar records.
- Result 2:** Protective potential of expectorants against COVID-19. Author: Esam Z. *Medical Hypotheses* 2020 142 Article Number 109844 Cited by: 0. Options: Embase, MEDLINE, Index Terms, View Full Text, Similar records.
- Result 3:** Discovery of a non-zwitterionic oseltamivir analogue as a potent influenza a neuraminidase inhibitor. Authors: Zhang H, Wang K, Zhu H, Zhao X, Zhao H, Lei Z, Chen B, Yang F, Liu K, Zhang K, Wang J, Tian Y.

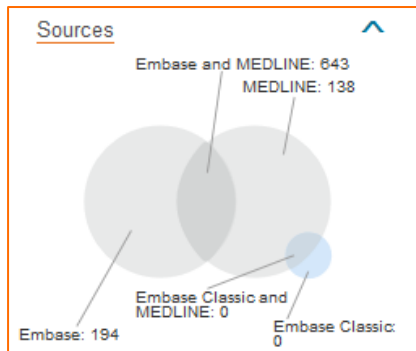
如何获取临床药理，实验药理，（组织，器官，细胞）的文献

Embase中的分析

Results Filters

+ Expand - Collapse all Apply >

- Sources
- Drugs
- Diseases
- Devices
- Floating Subheadings
- Age
- Gender
- Study types
- Publication types
- Journal titles
- Publication years
- Authors
- Conference Abstracts
- Drug Trade Names
- Drug Manufacturers



Tips:

Embase.com中完全包含Medline，所以在Embase.com至少有194篇文章是Medline中无法获取的

Study types

696

- human
- nonhuman
- controlled study
- clinical trial
- animal cell
- animal experiment
- in vitro study
- animal model

Study types

- in vivo study 53
- animal tissue 51
- major clinical study 31
- practice guideline 26
- randomized controlled trial 23
- molecular model 22
- drug dose comparison 21
- controlled clinical 19

Tips:

Study Type分析，获取不同的研究对象文献。

其中的一篇临床药理文献

Embase® Search Emtree Journals Results My tools

Record Details

[← Back to Results](#) [Export](#) [Send](#) [Add to clipboard](#) [Full record](#)


Translated Title
Antivirals for influenza: Strategies for use in pediatrics

Pediatric Drugs 2010 12 :5 (285 - 299)

Translated Abstract
Influenza infection is annually responsible for significant morbidity and mortality, particularly among the very young and old. Recently updated guidelines recommend influenza vaccination of all children aged 6 months to 18 years; however, childhood vaccination remains underutilized. Furthermore, concerns over the reduced efficacy of vaccination in children have further heightened the need for effective treatment schemes. Antiviral therapies have emerged as attractive options in the battle against influenza infection. These agents include the adamantanes (amantadine and rimantadine) and neuraminidase inhibitors (zanamivir, oseltamivir, and peramivir). Broad-scale use of adamantane antivirals has been severely limited in recent years because of high resistance rates and their inability to cover influenza type B. Neuraminidase inhibitors cover influenza types A and B, and have been promulgated to first-line therapy because of historically low resistance rates and relatively infrequent side effects. Moreover, these agents are effective options in combating non-seasonal influenza strains, including H5N1 and pandemic 2009 H1N1. Oseltamivir may be particularly appealing for treating children since it is available in multiple oral dosage formulations, whereas commercially available zanamivir use is limited in young children because it requires inhalation. However, the emergence of resistance to oseltamivir among influenza A strains may limit its usefulness. Additional concerns with neuraminidase inhibitor use in pediatrics center around emerging reports, primarily from Japan, that have temporally linked oseltamivir to significant neuropsychiatric events in children of varying ages. Numerous novel antiviral agents are under development, but most are far from market approval. In addition to treating and preventing the initial burden of pediatric influenza infection, antiviral therapies may significantly reduce secondary bacterial infections (including pneumonia and otitis media), unnecessary antibiotic prescribing, and healthcare-associated costs. © 2010 Adis Data Information BV. All rights reserved.

Embase对这篇全文的提炼与索引


Show all subheadings ▾

 Drug Terms

adamantane derivative % , amantadine % , antibiotic agent % , **antivirus agent** % , physostigmine % , ribavirin % , rimantadine % , sialidase inhibitor % , small interfering

 Disease Terms

abdominal pain % , anorexia % , anxiety disorder % , bacterial infection % , bronchospasm % , fatigue % , fever % , hallucination % , Human immunodeficiency virus infection % , influenza % , nausea % , neuroleptic malignant syndrome % , otitis media % , pneumonia % , seasickness % ,

 Other Terms

antiviral resistance % , **antiviral therapy** % , behavior % , **clinical trial** % , drug abuse % , human % , influenza vaccination % , Influenza virus % , Influenza A virus (H1N1) % , Influenza A virus (H3N2) % , patient compliance % , prescription % , priority journal % , recommended drug dose % ,

oseltamivir ✕

Key Subheadings:

- adverse drug reaction
- abdominal pain, delirium, diarrhea, drug fatality, hallucination, nausea, seizure, suicide, vomiting
- drug combination
- peramivir, rimantadine
- drug comparison
- zanamivir
- drug therapy
- influenza A (H1N1), influenza A (H3N2), influenza B

Other Subheadings:

- clinical trial, oral drug administration, pharmacokinetics, pharmacology

monoclonal antibody % , **oseltamivir** % , paracetamol % , peramivir % ,

Show all subheadings ▾

s % , drug fatality % , drug induced headache % , drug overdose % , **influenza A (H5N1)** % , **influenza B** % , insomnia % , vomiting % , withdrawal syndrome % , xerostomia %

efficacy % , drug half life % , gene mutation % , health care cost % , infection % , morbidity % , mortality % , nervousness % , nonhuman % , strain %

Embase对这篇全文的提炼与索引

Drug Tradenames	das 181, flumadine, relenza, symmetrel, tamiflu
CAS Registry Numbers	amantadine 665-66-7 R  , 768-94-5 R 
	cyanovirin N 212132-87-1 Reaxys Pub 
	favipiravir 259793-96-9 Reaxys Pub 
	laninamivir 203120-17-6 Reaxys Pub 
	oseltamivir 196618-13-0 R  , 204255-09-4 R  , 204255-11-8 R 
	paracetamol 103-90-2 Reaxys Pub 
	peramivir 229614-55-5 R  , 229614-56-6 R  , 229615-12-7 R 
	physostigmine 57-47-6 R  , 64-47-1 R 
	ribavirin 36791-04-5 Reaxys Pub 
	rimantadine 13392-28-4 R  , 1501-84-4 R 
	taribavirin 119567-79-2 R  , 40372-00-7 R 
	zanamivir 139110-80-8 Reaxys Pub 

带有Reaxys标记的，可以直接
跳转到Reaxys中查看结构，
(如已经订购该数据库)

同样一条记录在Medline中的提炼

Format: Abstract ▾ Send to ▾

[Paediatr Drugs](#). 2010 Oct 1;12(5):285-99. doi: 10.2165/11532530-000000000-00000.

Antivirals for influenza: strategies for use in pediatrics.

[Smith SM¹](#), [Gums JG](#).

⊕ Author information

Abstract

Influenza infection is annually responsible for significant morbidity and mortality. Updated guidelines recommend influenza vaccination of all children aged 6 months to 5 years. However, influenza vaccination remains underutilized. Furthermore, concerns over the reduced efficacy of influenza vaccines have led to the development of effective treatment schemes. Antiviral therapies have emerged as alternative treatment options. Antiviral agents include the adamantanes (amantadine and rimantadine) and neuraminidase inhibitors. Broad-scale use of adamantane antivirals has been severely limited in recent years because of historically low resistance rates and relatively infrequent side effects. Neuraminidase inhibitors cover influenza types A and B. Broad-scale use of neuraminidase inhibitors has been severely limited in recent years because of resistance in circulating influenza strains, including H5N1 and pandemic influenza A (H1N1) viruses. Broad-scale use of neuraminidase inhibitors in treating children since it is available in multiple oral dosage formulations, including suspensions, is limited because it requires inhalation. However, the emergence of resistance in circulating influenza strains has limited its usefulness. Additional concerns with neuraminidase inhibitor use in pediatrics include the risk of severe allergic reactions, which have temporally linked oseltamivir to significant neuropsychiatric effects. Although neuraminidase inhibitors and other antiviral agents are under development, but most are far from market approval. In the absence of effective antiviral agents for pediatric influenza infection, antiviral therapies may significantly reduce the burden of influenza infection (e.g., otitis media), unnecessary antibiotic prescribing, and healthcare-associated costs.

PMID: 20799758 DOI: 10.2165/11532530-000000000-00000
[Indexed for MEDLINE]

Publication type, MeSH terms, Substances

Publication type

[Review](#)

MeSH terms

[Adamantane/adverse effects](#)

[Adamantane/pharmacology](#)

[Adamantane/therapeutic use](#)

[Animals](#)

[Antiviral Agents/adverse effects](#)

[Antiviral Agents/pharmacology](#)

[Antiviral Agents/therapeutic use*](#)

[Child](#)

[Drug Therapy, Combination](#)

[Humans](#)

[Influenza, Human/drug therapy*](#)

[Neuraminidase/antagonists & inhibitors](#)

[Orthomyxoviridae/drug effects](#)

[Orthomyxoviridae/enzymology](#)

[Pediatrics/methods*](#)

Substances

[Antiviral Agents](#)

[Neuraminidase](#)

[Adamantane](#)

Medline的索引给出的信息极少，全文花了大篇幅介绍Oseltamavir，但是在其索引中却看不到



ELSEVIER

Case 3: 临床在研药物毒理药理文献的获取

- pralsetinib (BLU-667) 药理文献获取 (RET抑制剂)

'pralsetinib'

Search > Mapping ▾ Date ▾ Sources ▾ Drug fields ▾ Drug subheadings ▲ Routes ▾ Quick limits ▾ EBM ▾ Pub. types ▾ Languages ▾ Search tips ▾

Subheadings Clear page selections Collapse

<input type="checkbox"/> Adverse drug reaction	<input type="checkbox"/> Drug development	<input type="checkbox"/> Pharmacoeconomics
<input type="checkbox"/> Clinical trial	<input type="checkbox"/> Drug dose	<input type="checkbox"/> Pharmacokinetics
<input type="checkbox"/> Drug administration	<input type="checkbox"/> Drug interaction	<input checked="" type="checkbox"/> Pharmacology
<input type="checkbox"/> Drug analysis	<input type="checkbox"/> Drug therapy	<input type="checkbox"/> Special situation for pharmacovigilance
<input type="checkbox"/> Drug combination	<input type="checkbox"/> Drug toxicity	<input type="checkbox"/> Unexpected outcome of drug treatment
<input type="checkbox"/> Drug comparison	<input type="checkbox"/> Endogenous compound	
<input type="checkbox"/> Drug concentration	<input type="checkbox"/> Pharmaceuticals	

OR AND

Embase中的结果—pralsetinib的药理学文献

Embase® Search Entree Journals Results My tools Register Login (1) ?

Results

'pralsetinib/exp/dd_pd'

Search > Mapping > Date > Sources > Fields > Quick limits > EBM > Pub. types > Languages > Gender > Age > Animal > Search tips >

Results Filters

+ Expand - Collapse all Apply >

Sources

Embase and MEDLINE: 5
MEDLINE: 0
Embase Classic: 0
Embase Classic and MEDLINE: 0
Embase: 3

Drugs >
Diseases >
Devices >
Floating Subheadings >
Age >

History Save | Delete | Print view | Export | Email Combine > using And Or Collapse

#1 'pralsetinib/exp/dd_pd' 8

8 results for search #1 Set email alert Set RSS feed Search details Index miner

Results View | Print | Export | Email | Order | Add to Clipboard 1 — 8

Select number of items Selected: 0 (clear) Show all abstracts Sort by: Relevance Publication Year Entry Date

1 Tumour-agnostic therapies
Looney A.-M., Nawaz K., Webster R.M.
Nature Reviews Drug Discovery 2020 19:6 (383-384) Cited by: 1
Embase MEDLINE [No abstract available] Index Terms View Full Text Similar records >

2 Efficacy and Tolerability of Pyrazolo[1,5- a]pyrimidine RET Kinase Inhibitors for the Treatment of Lung Adenocarcinoma
Mathison C.J.N., Chianelli D., Rucker P.V., Nelson J., Roland J., Huang Z., Yang Y., Jiang J., Xie Y.F., Epple R., Bursulaya B., Lee C., Gao M.-Y., Shaffer J., Briones S., Sarkisova Y., Galkin A., Li L., Li N., Li C., Hua S., Kasibhatla S., Kinyamu-Akunda J., Kikkawa R., Molteni V., Tellew J.E.
ACS Medicinal Chemistry Letters 2020 11:4 (558-565) Cited by: 0
Embase Abstract Index Terms View Full Text Similar records >

3 RET Solvent Front Mutations Mediate Acquired Resistance to Selective RET Inhibition in RET-Driven Malignancies
Solomon B.J., Tan L., Lin J.J., Wong S.Q., Hollizeck S., Ebata K., Tuch B.B., Yoda S., Gainor J.F., Sequist L.V., Oxnard G.R., Gautschi O., Drilon A., Subbiah V., Khoo C., Zhu E.Y., Nguyen M., Henry D., Condroski K.R., Kolakowski G.R., Gomez E., Ballard J., Metcalf A.T., Blake J.F., Dawson S.-J., Blosser W., Stancato L.F., Brandhuber B.J., Andrews S., Robinson B.G., Rothenberg S.M.

Embase中的结果—pralsetinib的全部文献

The screenshot shows the Embase search results page for the query 'pralsetinib'. The interface includes a search bar at the top with the query 'pralsetinib' and a navigation menu with options like Search, Emtree, Journals, Results, My tools, Register, and Login. Below the search bar, there are various filters such as Mapping, Date, Sources, Fields, Quick limits, EBM, Pub. types, Languages, Gender, Age, and Animal. The main content area displays the search results, including a list of filters, a Venn diagram showing the overlap between Embase (28), MEDLINE (1), and Embase Classic and MEDLINE (0), and a list of search results. The first result is 'The Afirma Xpression Atlas for thyroid nodules and thyroid cancer metastases: Insights to inform clinical decision-making from a fine-needle aspiration sample' by Krane J.F., Cibas E.S., Endo M., Marqusee E., Hu M.I., Nasr C.E., Waguespack S.G., Wirth L.J., Kloos R.T. The second result is 'Optimal Management of Patients with Advanced NSCLC Harboring High PD-L1 Expression and Driver Mutations' by Chen J.A., Riess J.W. The third result is 'FDA Approves Selpercatinib; Pralsetinib May Soon Follow'.

Embase®

Search Emtree Journals Results My tools Register Login (1)

Results

'pralsetinib'

Search > Mapping Date Sources Fields Quick limits EBM Pub. types Languages Gender Age Animal Search tips

Results Filters

+ Expand - Collapse all Apply >

Sources

Embase and MEDLINE: 24
MEDLINE: 1
Embase Classic: 0
Embase Classic and MEDLINE: 0
Embase: 28

Drugs
Diseases
Devices
Floating Subheadings

History Save | Delete | Print view | Export | Email Combine > using And Or Collapse

#2 'pralsetinib' 51
 #1 'pralsetinib'/exp/dd_pd 8

51 results for search #2 Set email alert Set RSS feed Search details Index miner

Results View | Print | Export | Email | Order | Add to Clipboard 1 — 25 >

Select number of items Selected: 0 (clear) Show all abstracts Sort by: Relevance Publication Year Entry Date

1 The Afirma Xpression Atlas for thyroid nodules and thyroid cancer metastases: Insights to inform clinical decision-making from a fine-needle aspiration sample
Krane J.F., Cibas E.S., Endo M., Marqusee E., Hu M.I., Nasr C.E., Waguespack S.G., Wirth L.J., Kloos R.T.
Cancer Cytopathology 2020 128:7 (452-459)
Embase MEDLINE [No abstract available] Index Terms View Full Text Similar records >

2 Optimal Management of Patients with Advanced NSCLC Harboring High PD-L1 Expression and Driver Mutations
Chen J.A., Riess J.W.
Current Treatment Options in Oncology 2020 21:7 Article Number 60 Cited by: 0
Embase MEDLINE Abstract Index Terms View Full Text Similar records >

3 FDA Approves Selpercatinib; Pralsetinib May Soon Follow

同样的检索，Medline中却只能获取.....

Search NCBI

pralsetinib

Search

Results found in 6 databases

Literature

- Bookshelf 0
- MeSH 1
- NLM Catalog 0
- PubMed 9
- PubMed Central 6

Genomes

- Assembly 0
- BioCollections 0

Genes

- Gene
- GEO DataSets
- GEO Profiles
- HomoloGene
- PopSet

Genetics

- ClinVar
- dbGaP

Proteins

PubMed.gov

pralsetinib

Search

Advanced Create alert Create RSS User Guide

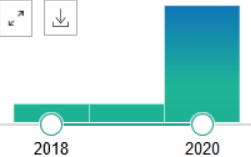
Save Email Send to

Sorted by: Most recent ↓ Display options

MY NCBI FILTERS

9 results

RESULTS BY YEAR



TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

ARTICLE ATTRIBUTE

- [Progresses toward precision medicine in RET-altered solid tumors.](#)
1 Belli C, Anand S, Gainor JF, Penault-Llorca F, Subbiah V, Drilon A, André F, Curigliano G. Clin Cancer Res. 2020 Jul 14;clincanres.1587.2020. doi: 10.1158/1078-0432.CCR-20-1587. Online ahead of print. PMID: 32665298
New selective RET inhibitors selpercatinib and **pralsetinib** are showing promising activities, improved response rates and more favorable toxicity profiles in early clinical trials. ...
- [FDA Approves Selpercatinib; Pralsetinib May Soon Follow.](#)
2 Cancer Discov. 2020 Jul;10(7):OF1. doi: 10.1158/2159-8290.CD-NB2020-052. Epub 2020 Jun 3. PMID: 32493697
Another RET inhibitor, **pralsetinib**, has been submitted for approval to treat NSCLC. Both drugs have shown effectiveness in treating brain metastases....
- [Quantitative bioanalytical assay for the selective RET inhibitors selpercatinib and pralsetinib in mouse plasma and tissue homogenates using liquid](#)

同一条记录在Embase和Medline中的记录—Embase

Embase® Search Entree Journals Results My tools Register Login

Record Details

← Back to Results Export Send Add to clipboard Full record Showing # 2 of 2

Translated Title
Quantitative bioanalytical assay for the selective RET inhibitors selpercatinib and pralsetinib in mouse plasma and tissue homogenates using liquid chromatography-tandem mass spectrometry

Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences 2020 1147 Article Number 122131

Translated Abstract
Selpercatinib and pralsetinib are potent and selective tyrosine kinase inhibitors targeting the rearranged during transfection (RET) receptor in various types of cancer. In this study, a bioanalytical assay was developed and fully validated for selpercatinib and pralsetinib in mouse plasma and partially in eight mouse tissue homogenates using liquid chromatography-tandem mass spectrometry. Samples were pre-treated by protein precipitation with acetonitrile using erlotinib as internal standard. Separation of the analytes was performed on an ethylene bridged octadecyl silica C18 column by gradient elution using ammonium hydroxide (in water) and methanol. Analytes were detected by positive electrospray ionization in selected reaction monitoring mode. A linear concentration range was established for both analytes. The precision values (within-day and between-day) ranged between 3.1% and 11.1%. Furthermore, data obtained for accuracy were between 91.7 and 109.3% and 85.1–111.1% for selpercatinib and pralsetinib, respectively. No significant matrix effects or extraction losses were observed and both analytes were stable under all investigated conditions. The assay was successfully applied to the analysis of mouse plasma and tissue homogenates. The method was validated and employed in a successful incurred sample reanalysis.

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Full text on publisher's website
Print record

Search more from author:
Senturk R.
Wang Y.
Schinkel A.H.
Beijnen J.H.
Spardans R.W.
Show all authors (5)

Embase中的索引从全文出发，直接给出药物在文献中涉及的研究与对比对象，不良反应等

pralsetinib

Key Subheadings:

- drug comparison
- erlotinib

Other Subheadings:

- drug analysis, drug concentration, pharmacokinetics

Show all subheadings

Drug Terms

acetonitrile, ammonium hydroxide, erlotinib, formic acid, methanol, pralsetinib, selpercatinib

Other Terms

analytical research, animal experiment, animal tissue, article, brain tissue, calibration, controlled study, drug blood level, drug determination, drug selectivity, drug stability, drug tissue level, electrospray mass spectrometry, female, freeze thawing, human, kidney tissue, limit of quantitation, liquid chromatography-mass spectrometry, liver tissue, lung parenchyma, male, matrix effect, maximum concentration, measurement accuracy, measurement precision, mouse, nonhuman, pilot study, plasma, precipitation, priority journal, quantitative assay, small intestine, small intestine content, spleen tissue, testis tissue, time to maximum plasma concentration, tissue homogenate, validation study

Author Keywords

LC-MS/MS, Mouse plasma, Pralsetinib, RET inhibitor, Selpercatinib, Tissue homogenate

Correspondence Address

Spardans R.W. Utrecht University, Faculty of Science, Department of Pharmaceutical Sciences, Division of Pharmacology, Universiteitsweg 99, CG Utrecht, Netherlands

同一条记录在Embase和Medline中的记录—Medline

Quantitative bioanalytical assay for the selective RET inhibitors selpercatinib and pralsetinib in mouse plasma and tissue homogenates using liquid chromatography-tandem mass spectrometry

Rahime Şentürk¹, Yaogeng Wang², Alfred H Schinkel³, Jos H Beijnen⁴, Rolf V

Affiliations + expand

PMID: 32416592 DOI: [10.1016/j.jchromb.2020.122131](https://doi.org/10.1016/j.jchromb.2020.122131)

[Free article](#)

同一条记录在Medline中，却没有索引。

Abstract

Selpercatinib and pralsetinib are potent and selective tyrosine kinase inhibitors targeting the rearranged during transfection (RET) receptor in various types of cancer. In this study, a bioanalytical assay was developed and fully validated for selpercatinib and pralsetinib in mouse plasma and partially in eight mouse tissue homogenates using liquid chromatograph-tandem mass spectrometry. Samples were pre-treated by protein precipitation with acetonitrile using erlotinib as internal standard. Separation of the analytes was performed on an ethylene bridged octadecyl silica C18 column by gradient elution using ammonium hydroxide (in water) and methanol. Analytes were detected by positive electrospray ionization in selected reaction monitoring mode. A linear concentration range of 2-2000 ng/ml was used for the validation of the assay for both inhibitors. The precision values (within-day and between-day) ranged between 3.4 and 10.2% for selpercatinib and 3.1-14.6% for pralsetinib in all matrices. Furthermore, data obtained for accuracy were between 91.7 and 109.3% and 85.1-114.1% for selpercatinib and pralsetinib, respectively. No significant matrix effects or extraction losses were observed and both analytes were stable under all investigated conditions. Finally, a pilot study for selpercatinib in mice was conducted employing this method, followed by a successful incurred sample reanalysis.

Keywords: LC-MS/MS; Mouse plasma; Pralsetinib; RET inhibitor; Selpercatinib; Tissue homogenate.

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Agenda

- 涉及具体结构的毒性数据的获取
- 涉及具体药物（上市，临床）的毒理药理文献的获取
- FDA/EMA审评文档中毒理药理信息的获取与对比

PharmaPendium(www.pharmapendium.com)

- PharmaPendium是唯一提供上市药物，临床前与临床，药效，药物安全与药代动力学、药物代谢与转运酶，药物不良反应报告等数据的一站式平台；同时还收录此领域的权威期刊书籍内容，如Meyler副反应大全和Mosby用药参考等，助力药物筛选和研发进程。

FDA & EMA所有的approval package (FDA: 1938年- 今，EMA: 1995年— 今)

2.29M+
FDA 审评文件

200K+
EMA 审评文件

9.45M+
FDA 药物不良反
应报告

673K+
FDA 咨询委员会
会议档案

Extracted Data:

PK Module

MET Module

FDA AERS

Efficacy Module

DDI Risk

4450
种药物的可
检索信息

1.6M+
药代动力学信息

305K+
药物代谢与转运
酶信息

1.66M+
药物安全信息

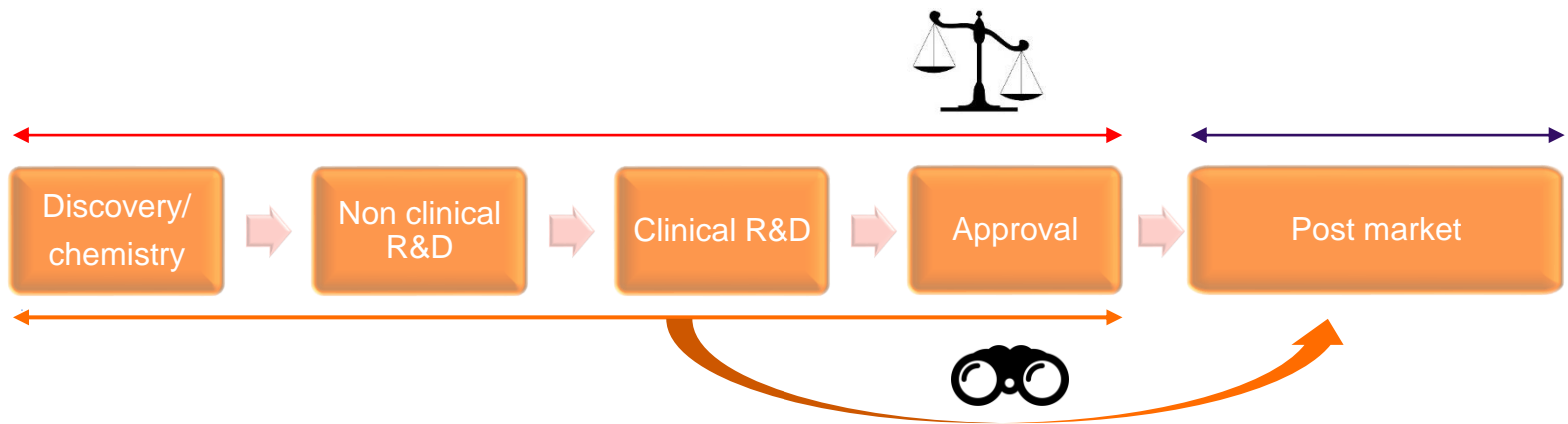
2.45M+
药效信息

115K+
生物活性信息

PharmaPendium的主要用途

报批：监管机构将安全性、有效性和可交付性与已上市药品进行比较（风险/效益分析）

只有当药物的性能优于市场上已经上市的药物时，才会批准使用



因此，在开发和批准过程中，您需要充分了解已上市药品的监管数据！！

Case 4: FDA/EMA审评文档中毒理药理信息的获取

- 案例要求与背景：
 - 正在开发一个作用域CDK靶点的药物
 - 市场要的CDK药物的QT延长数据如何？
 - 数据影响：监管见解、竞争情报/定位、动物模型选择和安全基准



Drug Safety Data

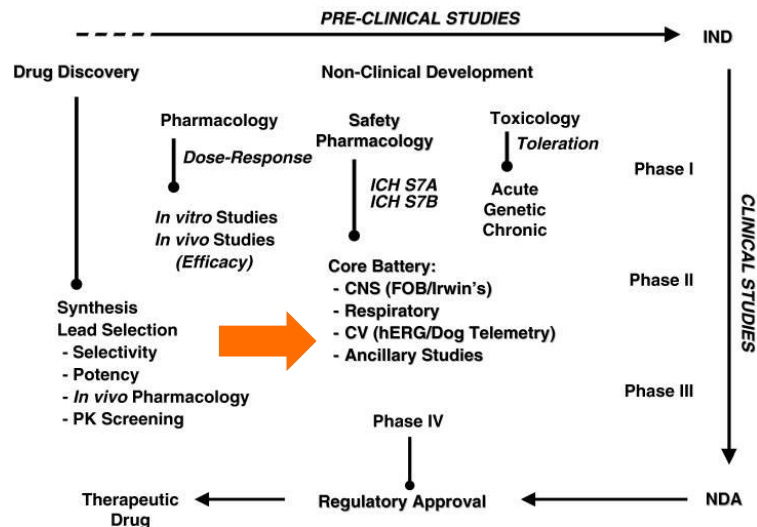
Safety data search

Preclinical, clinical and post-market data

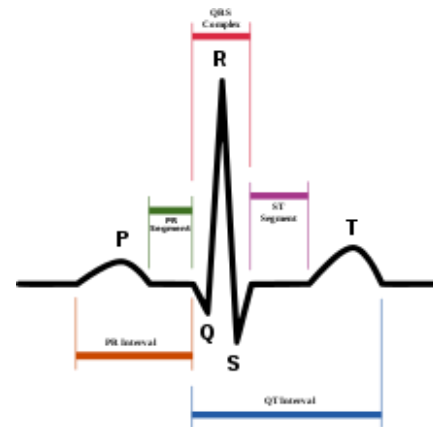
Drugs

- + Add drugs by drug class or drug name
- + Add drugs by primary target or primary target class
- + Add drugs by indication

安全药理学——QT延长研究



QT间期是测量心脏电周期中Q波开始和T波结束之间的时间。QT间期延长是室性快速心律失常（如尖端扭转）的潜在危险因素，也是猝死的危险因素



自2005年以来，FDA和EMA要求在一项彻底的QT（TQT）研究中评估几乎所有新的分子实体，以确定药物对QT间期的影响。



Pharmapendium中的检索

PharmaPendium® Browse ▾ Search ▾ My tools ▾ | IP-authorized

Safety data search Preclinical, clinical and post-market data Reset all Search >

Drugs

- + Add drugs by drug class or drug name
- + Add drugs by primary target or primary target class
- + Add drugs by indication

Adverse Effects / Toxicity

- + Add Adverse Effects / Toxicity

Species

- + Add species

Sources

- + Add sources

Add drugs by primary target or primary target class Cancel Done >

Search: Cyclin-dependent kinase (CDK) 4 and 6

- By SuperFamily
 - Enzymes
 - Transferases
 - Transferases Transferring Phosphorus-Containing Groups
 - Kinases
 - Cyclin-dependent kinases (CDK)
 - Cyclin-dependent kinase 4 (CDK4)
 - Cyclin-dependent kinase 6 (CDK6)
 - Tyrosine Kinases
 - Cyclin-dependent kinase (CDK) 4 and 6

Search on:

- Cyclin-dependent kinase (CDK) ...
- Cyclin-dependent kinase 4 (CDK4)
- Cyclin-dependent kinase 6 (CDK6)

Add Adverse Effects / Toxicity Cancel Done >

Search: Electrocardiogram QT prolonged

- Investigations
 - Cardiac and vascular investigations (excl enzyme tests)
 - ECG investigations
 - Electrocardiogram QT prolonged

Search on:

- Electrocardiogram QT prolonged

最后的结果

PharmaPendium®

Browse Search My tools

Safety data search results

Show/hide columns Show drugs in... Alert Save Share Export

62 records from Safety data: [Abemaciclib (9) OR Palbociclib (2) OR Ribociclib Succinate (51)] AND [Electrocardiogram QT prolonged (62)]

Filters Clear all Apply

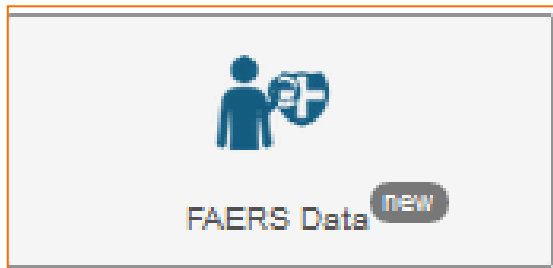
Preclinical Data Clinical Data Post-Marketing Reports (AERS) All Data

Adverse Effects / Toxicity	ID	Drug	Adverse Effect / Toxicity	Species	Dose	Dose Type	Route	Source	Year
	1	Abemaciclib	Electrocardiogram QT prolonged	Human	150 mg/twice daily	Repeated	Oral	FDA approval package document: Approval Package (Page:7) PDF 3265k	2018
	2	Abemaciclib	Electrocardiogram QT prolonged	Human	200 mg BID	Repeated	Oral	FDA approval package document: Approval Package (Page:35) PDF 678k	2017
	3	Abemaciclib	NDA/BLA Multi-disciplinary Review and Evaluation NDA 208716 VERZENIO (abemaciclib) QT A QTc analysis was performed based on data submitted in both the healthy and cancer populations as part of the abemaciclib NDA submission. The effect of abemaciclib on the QTcF interval was evaluated in 144 patients with advanced cancer. No change >20 ms in the QTcF interval was detected at the mean observed maximal steady state abemaciclib concentration following a regular dosing schedule. Exposure-response analysis in healthy subjects at up to 1.2 times the exposures observed in 200 mg twice daily dosing did not prolong the QTcF interval to a clinically relevant extent.			ated	Oral	FDA approval package document: Approval Package (Page:34) PDF 678k	2017
	4	Abemaciclib				ated	Oral	FDA approval package document: Approval Package (Page:2) PDF 613k	2018
	5	Abemaciclib				ated	Oral	FDA approval package document: Approval Package (Page:34) PDF 678k	2017
	6	Abemaciclib	In the MONARCH 2 study, there were five patients who developed QT prolongation while on study, 1 in the placebo group and 4 in the abemaciclib group. One patient had a grade 3 QT prolongation that was deemed not related to study therapy as this patient developed prolonged QT in the setting of a history of hypokalemia in the setting of diuretic therapy and this worsened in the setting of nausea and vomiting which was later found due to leptomeningeal metastases. A second patient developed grade 2 QT prolongation on cycle 1 day 5 thought related to study treatment. She discontinued therapy at the end of cycle 1 at which time she discontinued treatment due to diarrhea.			ated	Oral	FDA approval package document: Label (Page:8) PDF 537k	2017
	7	Abemaciclib				ated	Oral	EMA approval document: Public Assessment Report (Page:119) PDF 4934k	2018
	8	Abemaciclib	In the MONARCH 1 study, there was one patient on abemaciclib 200 mg twice daily who developed prolonged QT interval initially at the first cycle in the setting of diarrhea. Laboratory studies including serum potassium and sodium were within normal limits at the cycle 1 visit. She had mild hyponatremia at cycle 5 however she had no other laboratory abnormalities. The patient discontinued study therapy at cycle 7 due to this adverse event. The maximal severity of this event was grade 2.			ated	Oral	FDA approval package document: Approval Package (Page:35)	2017

Default Settings or Save Filter Settings

Case 5: DDI数据的查询

- 案例要求与背景：
 - 正在开发COPD的药物，该药物与Theophylline性质很像
 - 我的药物会经常与Ciprofloxacin合用
 - 那么Theophylline和Ciprofloxacin之间是否存在药物相互作用的上市后药代动力学证据？
 - 数据影响：设置正确的测试，降低开发风险并优化标签



Summary Table and Graphical View ^{NEW}

Select drugs of interest
 Select adverse events (AEs) of interest

[Start](#)











This new search type enables more advanced queries of FAERS reports.

Options include viewing FAERS reports:
-Based on a group of drugs (applying logic operators AND/OR/NOT)
-With comparative view of drugs in a summary table (e.g., view FAERS reports for a drug versus another drug),
-With a graphical representation of the FAERS reports.
-All types of searches include advanced filtering options (e.g., by reporter occupation, age, gender, etc.)

[Watch tutorial for a quick to ur!](#)

Pharmapendium中的检索（依次添加Theophylline与Ciprofloxacin）

PharmaPendium®

Browse ▾ Search ▾ My tools ▾ |        IP-authorized   

Add Drugs [Add column\(s\)](#) [Back](#)

✕

by name or class [by primary target or target class](#) [by indication](#)

- Ciprofloxacin Hydrochloride; Dexamethasone [Add](#)
- Ciprofloxacin Hydrochloride; Hydrocortisone [Add](#)
- Ciprofloxacin; Fluocinolone Acetonide [Add](#)
- ▼ Ophthalmics [Add](#)
 - Ciprofloxacin Hydrochloride [Add](#)
- ▼ Otics [Add](#)
 - Ciprofloxacin Hydrochloride; Dexamethasone [Add](#)
 - Ciprofloxacin Hydrochloride; Hydrocortisone [Add](#)

Logic operators

Each element from the following selection will be added as separate column:

✕ Theophylline	Any role ▾
✕ Ciprofloxacin Hydrochloride	Any role ▾

Pharmapendium中结果

PharmaPendium® Browse Search My tools | IP-authorized

Summary Table with Adverse Effects Tree (FAERS data)

View as [Table](#) [Graph](#) Compare Filters View AEs by [area affected](#) Export Alert Save Share

Heatmap gradation ranges 0.82% - 8.74% 8.75% - 16.67% 16.68% - 24.6% 24.61% - 32.53% 32.54% - 40.44% [Edit Ranges](#)





Data Display Options [Show Results And Percentages](#)

Summary Table with Adverse Effects Tree	Ciprofloxacin Hydr...	Theophylline	Add Drugs	
Total	108555	100%	30930	100%
min & max per column	1078 - 42764	0.99% - 39.3...	255 - 12507	0.82% - 40.4...
+ Blood and lymphatic system disorders	14197	13.08%	2543	8.22%
+ Cardiac disorders	11832	10.90%	5474	17.70%
+ Congenital, familial and genetic disorders	1078	0.99%	255	0.82%
+ Ear and labyrinth disorders	3718	3.42%	474	1.53%
+ Endocrine disorders	1826	1.68%	516	1.67%
+ Eye disorders	7009	6.46%	1469	4.75%
+ Gastrointestinal disorders	28185	25.96%	6857	22.17%
+ General disorders and administration site conditions	42764	39.39%	12507	40.44%


可以查看单药数据，并在同一时间，添加药物联用数据

继续添加两药联用的数据

PharmaPendium®

Browse ▾ Search ▾ My tools ▾ |  IP-authorized   

Add Drugs [Add group](#) [Back](#)




by name or class by primary target or target class by indication



- Ciprofloxacin Hydrochloride; Dexamethasone [Add](#)
- Ciprofloxacin Hydrochloride; Hydrocortisone [Add](#)
- Ciprofloxacin; Fluocinolone Acetonide [Add](#)
- Ophthalmics** [Add](#)
 - Ciprofloxacin Hydrochloride [Add](#)
- Otics** [Add](#)
 - Ciprofloxacin Hydrochloride; Dexamethasone [Add](#)
 - Ciprofloxacin Hydrochloride; Hydrocortisone [Add](#)

Logic operators [Add OR](#) [Add NOT](#)

All of the following drugs will be added as a single column:






Group name*
Theophylline and Ciprofloxacin





You are adding here (all elements work via AND logical operator) 

 Theophylline	Any role ▾
 Ciprofloxacin Hydrochloride	Any role ▾





运用逻辑关系，将两药物绑定

继续添加两药联用的数据


-  Delete
-  Edit
-  Most frequent first
-  Least frequent first
-  Default sorting




PharmaPendium® Browse ▾ Search ▾ My tools ▾    

Summary Table with Adverse Effects Tree (FAERS data)

View as [Table](#) [Graph](#) Compare Filters View AEs by [area affected](#) ▾ Export  Alert  Save  Share 

Heatmap gradation ranges Data Display Options

0.39% - 8.91% 8.92% - 17.44% 17.45% - 25.97% 25.98% - 34.5% 34.51% - 43.04% [Edit Ranges](#)  [Show Results And Percentages](#) ▾

Summary Table with Adverse Effects Tree	Theophylline and Ci... ▾ 	Ciprofloxacin Hydr... ▾ 	Theophylline ▾ 	Add Drugs	
Total	776 100%	108555 100%	30930 100%		
min & max per column	3 - 334 0.39% - 43.04%	1078 - 42764 0.99% - 39.39%	255 - 12507 0.82% - 40.44%		
+ General disorders and administration site conditions	334 43.04%	42764 39.39%	12507 40.44%		
+ Infections and infestations	289 37.24%	27561 25.39%	7024 22.71%		
+ Respiratory, thoracic and mediastinal disorders	256 32.99%	17507 16.13%	10669 34.49%		
+ Nervous system disorders	233 30.03%	27773 25.58%	7611 24.61%		
+ Gastrointestinal disorders	232 29.90%	28185 25.96%	6857 22.17%		
+ Investigations	220 28.35%	21915 20.19%	8175 26.43%		
+ Renal and urinary disorders	195 25.13%	17096 15.75%	3588 11.60%		
+ Psychiatric disorders	178 22.94%	15630 14.40%	4586 14.83%		
+ Cardiac disorders	170 21.91%	11832 10.90%	5474 17.70%		
+ Skin and subcutaneous tissue disorders	159 20.49%	19684 18.13%	3824 12.36%		
+ Blood and lymphatic system disorders	134 17.27%	14197 13.08%	2543 8.22%		
+ Metabolism and nutrition disorders	132 17.01%	12036 11.09%	3772 12.20%		
+ Musculoskeletal and connective tissue disorders	122 15.72%	23251 21.42%	4218 13.64%		

单药使用，
与联用的不
良对比

用柱状图查看直接对比



药物毒理药理学文献的获取

- RMC从大量文献和专利中摘取和物质生物活性相关的数据，帮助科研人员获得标准化，规范化，格式化的数据列表及参考文献
- PharmaPendium帮助全面获取上市药物的监管数据，可以为实验方案的设计，产品定位提供全方位的数据支持
- Embase是全球最大的生物医药文献类数据库，也是最大的毒理药理学数据库，其内部的三级索引体系，为科研人员快速获取文献，提供了强大的工具支持
- Elsevier Life Science培训中心
 - <https://www.elsevier.com/zh-cn/rd-solutions/pharma-and-life-sciences-solutions/life-sciences-online-training-center>



该二维码7天内(7月29日前)有效，重新进入将更新



Thank you

