



**CAS STN<sup>ext</sup><sup>®</sup> COFFEE LECTURE** 

**MEET THE DATABASES – TRIPLE INDEXING IN EMBASE**

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# Embase on CAS STNext®

Bibliographic database covering medical and pharmaceutical information from non-patent literature (1947 – present)

Contains Registry Numbers

Controlled Term Thesaurus (EMTREE)

Updated daily

Produced by Elsevier

# Important Embase dates

Contains unique Medline records from 1946 onwards

Conference abstracts added in 2012

Effective Nov 2016, Embase Alert companion file fully integrated into Embase (incl articles-in-press)

May 2023 – new EMTREE thesaurus added

# What is Triple Indexing

Also referred to as Triple Linking

Permits a searcher to view or search for precise relationships between drugs, diseases and medical devices

Linkage is via a selection of Embase subheadings (link terms)

Link terms connected to Drugs (1988), diseases (1988), routes of administration (2000) and medical devices (2016)

=> [HELP LTERMS](#)

# Drug and Disease Links

DRUG LINK	CODE	DISEASE LINK	CODE
-----	----	-----	----
adverse drug reaction	AE	complication	CO
clinical trial	CT	congenital disorder	CN
drug administration	AD	diagnosis	DI
drug analysis	AN	disease management	DM
drug combination	CB	drug resistance	DR
drug comparison	CM	drug therapy	DT
drug concentration	CR	epidemiology	EP
drug development	DV	etiology	ET
drug dose	DO	prevention	PC
drug interaction	IT	radiotherapy	RT
drug therapy	DT	rehabilitation	RH
drug toxicity	TO	side effect	SI
endogenous compound	EC	surgery	SU
pharmaceuticals	PR	therapy	TH
pharmacoeconomics	PE		
pharmacokinetics	PK		
pharmacology	PD		

# Routes of Administration and medical device examples

ROUTE OF DRUG ADMINISTRATION LINKS	CODE
buccal drug administration NT: sublabial, sublingual	BD
epidural drug administration BT: intraspinal	EI
inhalational drug administration	IH
intraarterial drug administration	IA
intraarticular drug administration	AR
intrabronchial drug administration	BR
intrabursal drug administration	BU
intracameral drug administration BT: intraocular	CL
intracardiac drug administration	IC
intracavernous drug administration	CA

MEDICAL DEVICE LINK	CODE
-----	----
adverse device effect	AM
device comparison	DC
device economics	DE
clinical trial	CT

# Explore what links mean

## EXPAND

=> E PE/CT

E#	FREQUENCY	AT	TERM
--	-----	--	----
E1	2		PDZRN4 PROTEIN, HUMAN/CT
E2	4		PDZRN4 PROTEIN: EC, ENDOGENOUS COMPOUND/CT
E3	86764	2 -->	PE/CT

=> E E3+ALL

E13	86764	-->	PE/CT
		TYPE	medical term
E14	95388	USE	pharmacoeconomics/CT
***** END *****			

=> E E14+ALL

E15	2359	BT2	health care concepts/CT
E16	271019	BT1	disease management/CT
E17	213	BT4	society and environment/CT
E18	846585	BT3	society/CT
E19	128904	BT2	economic aspect/CT
E20	2359	BT2	health care concepts/CT
E21	40373	BT1	health economics/CT
E22	95388	-->	pharmacoeconomics/CT
E23	86764	QA	PE/CT
		TYPE	medical term
		HNTE	Creation date 01 JAN 1994
		INDX	Used as a drug subheading for the economic evaluation of drug therapy, including cost analysis, treatment outcome and quality of life studies

# Examples

TERM	SUBHEADING	LINKED TERM	EXAMPLE
DRUG	ADVERSE DRUG REACTION	DISEASE	clopidogrel: <b>AE</b> : bleeding
DRUG	COMBINATION	DRUG	cisplatin: <b>CB</b> : docetaxel
DRUG	COMPARISON	DRUG	heparin: <b>CM</b> : bivalirudin
DRUG	INTERACTION	DRUG	trametinib: <b>IT</b> : antineoplastic agent
DRUG	THERAPY	DISEASE	ticagrelor: <b>DT</b> : atrial fibrillation
DEVICE	ADVERSE DEVICE REACTION	DISEASE	drug eluting stent: <b>AM</b> : stent thrombosis
DEVICE	COMPARISON	DEVICE	drug eluting stent: <b>DC</b> : bare metal stent
DISEASE	DRUG THERAPY	DRUG	hypertension: <b>DT</b> : atenolol
DISEASE	SIDE EFFECT	DRUG	pneumonia: <b>SI</b> : nivolumab



# Search based on triple linked terms

Find publications where Imatinib is used in combination with Bosutinib

```
=> FILE EMBASE
=> S IMATINIB/CT (L)CB/CT AND BOSUTINIB/CT (L) CB/CT
=> L2 40 IMATINIB/CT (L)CB/CT AND BOSUTINIB/CT (L) CB/CT
=> D L2 KWIC
L1 ANSWER 1 OF 30 EMBASE COPYRIGHT (c) 2023 Elsevier B.V.
bosutinib: CB, drug combination; peginterferon alpha
bosutinib: DT, drug therapy; chronic myeloid leukemia
dasatinib: CB, drug combination; imatinib
```

Prior to the possibility of searching triple linking, the only option was to combine with AND. Irrelevant hits also retrieved

# Search based on triple linked terms

Find publications where Imatinib is used in combination with Bosutinib

```
=> FILE EMBASE
```

```
=> S IMATINIB/CT (L) CB/CT (L) BOSUTINIB/CT
```

```
  L1 10 IMATINIB/CT (L) CB/CT (L) BOSUTINIB/CT
```

```
=> D L1 KWIC
```

```
L1 ANSWER 1 OF 10 EMBASE COPYRIGHT (c) 2023 Elsevier B.V.
```

```
BCR ABL protein: EC, endogenous compound
```

```
bosutinib: CB, drug combination; dasatinib
```

```
bosutinib: CB, drug combination; imatinib
```

Fewer but more relevant hits  
retrieved

# Analysis on linking terms to identify reported drug combinations

```
⇒ S IMATINIB/CT (L) CB/CT  
  
48343 IMATINIB/CT  
960417 CB/CT  
L6 3890 IMATINIB/CT (L) CB/CT
```

```
⇒ ANALYZE L6 1- HIT CT; D TOP 10
```

```
L7 ANALYZE L6 1- CT HIT : 1253 TERMS
```

TERM #	# OCC	# DOC	% DOC	CT
1	13026	3890	100.00	CB
2	13026	3890	100.00	DRUG COMBINATION
3	12675	3890	100.00	IMATINIB
4	536	266	6.84	CYTARABINE
5	472	234	6.02	HYDROXYUREA
6	379	188	4.83	VINCRIStINE
7	334	168	4.32	CYCLOPHOSPHAMIDE
8	294	149	3.83	DOXORUBICIN
9	292	149	3.83	NILOTINIB
10	268	133	3.42	DEXAMETHASONE

# Analysis to determine reported adverse effects

```
=> S IMATINIB/CT (L) AE/CT
      48343 IMATINIB/CT
      1426767 AE/CT|
L8      5416 IMATINIB/CT (L) AE/CT
```

```
L9      ANALYZE L8 1- CT HIT :      1643 TERMS

TERM #   # OCC   # DOC   % DOC   CT
-----
1      23395   5416  100.00  ADVERSE DRUG REACTION
2      23358   5416  100.00  AE
3      22845   5416  100.00  IMATINIB
4       902    887   16.38  DIARRHEA
5       872    861   15.90  NAUSEA
6       750    746   13.77  EDEMA
7       744    727   13.42  NEUTROPENIA
8       732    716   13.22  FATIGUE
9       694    679   12.54  THROMBOCYTOPENIA|
10      656    646   11.93  ANEMIA
11      563    558   10.30  RASH
12      451    442    8.16  VOMITING
13      441    441    8.14  UNSPECIFIED SIDE EFFECT
14      418    417    7.70  MUSCLE CRAMP
15      398    388    7.16  MYALGIA
```

# Summary

Embase gives access to global coverage of pharmaceutical and biomedical publications (over 8500 titles from 95 countries)

Added precision to searches with triple linking of subheadings (link terms)

Use Analyse to reveal insights into drug/disease relationships

Between problems  
and progress  
are connections  
that matter



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