SciFinder®

Search strategies for Pharmacy topics
Topic

Andrographis Paniculata for therapeutic treatment – Pharmacology, Bioavailability, Toxicity of andrographolide

Possible concepts to use:
Andrographis paniculata, treatment, pharmacology, bioavailability, toxicity, andrographolide
• Begin with a broad search, Research Topic: andrographis paniculata

• Select option 2
Results

- References come from CAPLUS and MEDLINE
- Analyze by Index Term to see Concepts for references from both CAPLUS and MEDLINE

Analyzing by Index Term allows you to get an idea of what are the frequently researched topics in relation to your search topic, in this case “andrographis paniculata”. E.g. if we are interested in the pharmacology of andrographis paniculata, the concept “Anti-Inflammatory Agents” will be an interesting one to look into further.
Results

• Use Categorize to browse index terms by categories
• E.g. For therapeutic related index terms, use Biotechnology > Medicine to find other bioactivity related index terms

Browsing index terms by categories allows you to more quickly find concepts that are relevant to your research topic. However Category Headings are CAS terminology and are applied only on references from CAPLUS. Refining references with Categorize will immediately leave out any Medline references in your initial answer set. If you like to keep Medline references in your answer set, use the Index Terms as a keyword to Refine as Research Topic instead.
Results

- Refine references with additional concepts => “antitumor”

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th>Get</th>
<th>Get</th>
<th>Get</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>REFS</td>
<td>Substance</td>
<td>Reactions</td>
<td>Related Citations</td>
<td>Get</td>
</tr>
<tr>
<td># of 352 References Selected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Andrographolide loaded in micro- and nano-formulations: improved bioavailability, target-tissue distribution, and efficacy of the “king of bitters”
   - Quick View
   - Company Name: CAS
   - Publication Year: 2016
   - Language: English
   - Database: CAPLUS
   - Refine references with additional concepts => “antitumor”

2. In vitro and in vitro evaluation of apoptotic induction potential of andrographolide in breast carcinoma cells
   - Quick View
   - Company Name: SciFinder
   - Publication Year: 2014
   - Language: English
   - Database: CAPLUS
   - Refine references with additional concepts => “antitumor”

3. Role of Kalmegh (Andrographis paniculata (Burm.F.) Wall. Ex Nees) in tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) mediated induced apoptosis
   - Quick View
   - Company Name: SciFinder
   - Publication Year: 2016
   - Language: English
   - Database: CAPLUS
   - Refine references with additional concepts => “antitumor”

Notice the synonyms that SciFinder automatically includes in the search

Export as *.ris to use in Endnote or Mendeley
Results

- Refine by Document Type to find references on Clinical Trials

1. Phytochemical screening and preliminary clinical trials of the aqueous extract mixture of *Andrographis paniculata* (Burm. f) Wall. ex Nees and Syzygium polyanthum (Wight.) Walp leaves in metformin treated patients with type 2 diabetes

   BACKGROUND: Our previous preclinical study showed that the extract mixture (BM of *Andrographis paniculata* (Burm. f) Wall. ex Nees (AP) and *Syzygium polyanthum* (Wight.) Walp (SP) leaves had antidiabetic effects and were beneficial in alloxan-induced diabetic rats. PURPOSE: The objectives of this study were to: (1) identify the phytochemical compounds present in aqueous extract of AP and SP and (2) examine the benefits of the EM of AP and SP leaves in lowering blood glucose, lipids, and the presence of standard antidiabetic treatment using metformin in type 2 diabetic patients in Indonesian Traditional Medicine Polyclinic of Dr. Soetomo General Hospital in Surabaya. METHODS: Phytochemical analysis of aqueous leaf extract and SP was performed using standard chemical tests, TLC, and GC-MS. Furthermore, a total of 54 subjects with T2DM participated in this study and were randomly assigned to either the intervention group supplemented with the extract mixture (AP and SP at a dose 900 mg/day for 8 weeks, or the control group which received placebo tablets in a randomized placebo-controlled double-blind parallel clinical trial. Both groups received metformin at a dose 1000 mg/day. Body weight, pressure, fasting blood glucose, postprandial glucose, haemoglobin A1c, triglycerides, total cholesterol, low density lipoprotein, high density lipoprotein, and markers of liver and kidney damage were measured. RESULTS: The results of phytochemical analysis showed that the glycosides, terpenoids, alkaloids, flavonoids, saponins, and tannins were found to be present in the extract mixture. GC-MS analyses of AP and SP showed the presence of 19 and 12 peaks, respectively. Methyl ester of 9-octadecenonic and eicosonic acid were determined as the main constituents of both species. Moreover, the results of clinical study suggested that the extract mixture improved the decrease of fasting blood glucose and postprandial glucose, significantly lowered body mass index compared with the control group. The EM appeared beneficial for SGPT values and uric acid levels. CONCLUSION: Overall, the results of this study suggested the potential beneficial effects of the extract mixture for use as complementary medicine alongside conventional treatment of metformin. The extract mixture contained many highly potent compounds for treating T2DM and preventing short- and long-term risk complications of diabetes.

2. Effect of *Andrographis paniculata* Extract on Triglyceride Levels of the Patients with Hypertryglyceridemia: A Randomized Controlled Trial

   BACKGROUND: Hypertryglyceridemia is one of the risk factors for cardiovascular disease, and reduction of triglyceride (TG) level is recommended in clinical practice guidelines for the treatment. Recently, andrographolide, a main active compound in *Andrographis paniculata* has been shown to possess hypolipidemic effects in animals. OBJECTIVE: To investigate the TG-lowering effects of *A. paniculata* extract (APE) in patients with hypertriglyceridemia (TG ≥ 150 mg/dL) using gemfibrozil treatment as the reference. MATERIAL AND METHOD: A randomized controlled clinical trial was carried out in sixty subjects with hypertriglyceridemia. They were divided into three groups and treated with low dose of APE (APE-L, andrographolide 71.64-72.36 mg/day), high dose of APE (APE-H, andrographolide 119.64-120.36 mg/day), and gemfibrozil 300 mg/day. The treatments were conducted for 8 weeks. Guidance on lifestyle modifications was provided. RESULTS: The primary endpoint was the mean difference = 30 (55% CI) in TG levels (baseline from the end of treatment), which were -3 = 125.6 (59.1, 58.3), 41.6 = 86.3 (1.2, 82), and 57.1 = 94.3 (12.7, 101.6) in the APE-L, APE-H, and gemfibrozil groups, respectively. APE-H 120 mg/day and gemfibrozil 300 mg/day caused a significant reduction of TG level (P = 0.044, 0.0145, respectively) when compared to the baseline. There was no notable difference in the safety or tolerability among the treatment groups. CONCLUSION: In patients with modest hypertriglyceridemia with lifestyle intervention, APE-H reduced the TG level comparable to the effect of gemfibrozil 300 mg/day. APE treatment was as tolerable as gemfibrozil treatment.  

3. Ethnobotanical survey of malaria prophylactic remedies in Odisha, India
• Since we know that andrographolide is the main bioactive component in andrographis paniculata, we can also run a search for andrographolide as a substance. Search for Substance -> Substance identifier

• Click on CAS Registry Number
Substance Detail View provides further information e.g. Drug synonyms, Bioactivity Indicators, Target indicators etc

Retrieves references relevant to andrographolide and we have the option to view references that contain specified information on andrographolide. E.g. Adverse Effect for toxicity related literature; Biological study will cover studies like pharmacological studies, PK/PD studies etc.

Bioactivity Indicators provides a high level overview of bioactivity linked to andrographolide. Note that this is consistent with our findings from a Research Topic search on “andrographis paniculata”.

Each of the Indicators are hyperlinks that retrieves references that link andrographolide to that bioactivity indicator

Target Indicators provides a high level overview of biological targets that are linked to andrographolide.
Review results

• After clicking “Get References” and limiting to “Biological study”, use Categorize to find index terms related to bioavailability.

Refining answer set by the index term “Drug bioavailability” gives us a concise set of references that describes different reasons that contribute to poor bioavailability of andrographolide e.g. poor solubility, metabolism and pgp efflux.
Search by Research Topic again

Using Analyze and Categorize by Index terms and retrieving references from a substance search helps us to find references of higher relevancy and also find references that use substance synonyms, however the Indexing must be available, whether is it a Medline or CAPLUS reference, for these references to be retrieved.

This means that typically more recent articles where the indexing process is not completed will be excluded. Hence, for a more comprehensive search, we can supplement our search of index terms or substances with a Research Topic search to find any additional references.

Decide on the desired level of proximity of the concepts. Typically closely associated gives references with better relevancy
Results

- It is common to use multiple search strategies to find references for a single topic. In such cases, you may wish to add a tag to the relevant references from each search strategy.
- Go to Explore > Tags to views all the references combined from the different strategies.
2-OG oxygenases – Chemical scaffolds and structural motifs of its small molecule inhibitors

Possible concepts to use:
2-OG oxygenases, inhibitors, small molecule, SAR
• Begin with a broad search, Research Topic: 2-OG oxygenases

If you are uncertain what is the best term to use for searching, run a trial search to see what kind of references it retrieves, even if it only finds a small number of references.

More importantly review the references found, if they are relevant analyze how authors generally describe this topic. It is also useful to look at the Indexing section if available and see if there is a preferred terminology used by the database for the topic of interest.

• Select option 2

1 of 3 Research Topic Candidates Selected

- 15 references were found containing "2-OG oxygenases" as entered.
- 24 references were found containing the concept "2 OG oxygenases".
- 33243134 references were found containing at least one of the concepts "2", "OG" or "oxygenases".

Get References
Results

• Review answer set to learn how are 2-OG oxygenases described.

• 2-OG dependent oxygenases
• 2-OG enzymes
• 2-oxoglutarate (2OG)-dependent oxygenases
• 2-oxoglutarate (2-OG) and Fe2+-dependent oxygenases
• 2-OG oxygenases

Searching the full name of the enzyme could yield better results.
Results

• Review Indexing to see how the database analyzed information for such topics

2-Oxoglutarate Oxygenase is a substance in the CAS Registry database. We can also start with a substance search and then Get Reference as an alternative strategy.

There are about 254 references linked to 2-Oxoglutarate Oxygenase.
• Modify initial search query. If you like to search both terms, add the second term in parentheses.

- 2-OG oxygenase (2-oxoglutarate oxygenase)
- Examples:
  - The effect of antibiotic residues on dairy products
  - Photocyanation of aromatic compounds

  Search

  Advanced Search

• Select option 2

- 326 references were found containing either the concept "2 OG oxygenase" or the concept "2 oxoglutarate oxygenase".
- 33251762 references were found containing at least one of the concepts "2", "OG", "oxygenase" or "2 oxoglutarate oxygenase".
- 17 references were found containing the concept "2 OG oxygenase".
- 33251762 references were found containing at least one of the concepts "2", "OG" or "oxygenase".
- 317 references were found containing the concept "2 oxoglutarate oxygenase".
• Refine by Research Topic > “inhibitors”

Use Quick View and click through substance images to see what kind of substances are indexed and what are the chemical scaffolds.

Results
Results

• You can also click on the Reference title to look at Indexing to evaluate the substances indexed.

Use Get Substances to view all substances in this reference at one time. Use the roles to retrieve only selective substances. E.g. we may not be interested to view reactants or intermediates, but only substances that were tested in a biological study, so we can limit results to “Biological Study”.

Use Quick View to view chemical structures.

A short description is available to give you an idea on what role the substance played in the reference. E.g. in this example we know that substances were synthetically prepared and studied in a biological study for pharmacological activity against the N6-methyladenosine demethylase FTO.
Results

• View structures of the inhibitors at one glance and identify common structural motifs. You may export the structures.
Use Categorize to quickly find references that look at SAR of 2-OG oxygenases

A limitation of a keyword search is that it looks only for the presence of the keyword in the reference record and does not take into consideration the context of the reference, hence resulting in retrieval of some irrelevant results.

E.g. in this case “inhibitors” is referring to ROS inhibitors.

E.g. in this case “inhibiting” is referring to the name of an enzyme.
Looking at Cited and Citing references is another way to find relevant references.

Use Analyze by Index Term to find Citing references that study SAR.
Looking at Cited and Citing references is another way to find relevant references.

Use Analyze by Index Term to find Citing references that study SAR.
Additional references are identified that studied enzymes belonging to the 2-OG oxygenase class of enzymes but did not use the phrase “2-OG oxygenase” in the Title or Abstract.
Repeat the same steps for “Cited References”. You can save each answer set and use the Combine tool to combine all references into a single answer set.
There are a total of 33 unique references that contain the Index Term Structure-activity relationship related to 2-OG oxygenases. Use “Get Substances” to look at all the chemical scaffolds.
Thank you!

Online training materials:

http://www.cas.org/training/scifinder