

Instruction manual for KNApSAcK family

All databases can be accessed, and KNApSAcK Search Engine can be downloaded, via the website http://kanaya.naist.jp/KNApSAcK_Family/.

Please use the following reference for citation:

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NAIST University of Science and Technology imns

“KNApSAcK” Family
Since 2008.07 Vol.15

KNApSAcK Metabolomics

3D Since 2012.11

Core System Since 2004.04

Search Engine Since 2008.12

Pocket Search for Functional Species

Food & Health

- YAKUZEN 薬膳データベース Since 2015.09
- Lunch Box 食用データベース Since 2008.07
- DietNavi 病氣予防データベース Since 2012.11
- FoodProcessor 加工食品データベース Since 2012.11
- DietDish 食バ合わせデータベース Since 2014.04
- MARCHE 旬データベース Since 2014.04

Crude Drug

- WorldMap 世界の薬用植物データベース Since 2009.06
- KAMPO 漢方薬、生薬データベース Since 2008.06
- JAMU IndonesiaHerb データベース Since 2009.11
- Tea Pot 茶データベース Since 2011.09

Biology

- Metabolite Ecology Distribution Since 2015.02
- Biological Activity Natural Activity Since 2011.08
- Biological Activity Metabolite Activity Since 2013.01

Picnic Gene Annotation

- Arabidopsis Since 2008.04
- Bacillus Since 2008.05
- Human Since 2009.03

Strap Correlation Coefficient

- Arabidopsis Since 2009.06
- Bacillus

Pickaxe Metalloprotein Database

- MetalMine Since 2009.08

Motorcycle Metabolic Pathway

- 代謝データベース Since 2011.08

Bicycle Algae Metabolic Pathway

- 代謝データベース Since 2013.09

Skewered KNApSAcK 串刺し検索 Since 2010.10

[Instruction Manual\(Japanese\)](#) [Instruction Manual\(English\)](#)

Panel Main Main window of “KNApSAcK” Family

The purpose of the KNApSAcK Metabolomics is to search metabolites from MS peak, molecular weight and molecular formula, and species. It consists of KNApSAcK Metabolomics Search Engine and KNApSAcK Core System.

A1 KNApSAcK Core System

KNApSAcK Core System search metabolites and species using KNApSAcK Core DB which consists of species-metabolite relations. KNApSAcK Core system (**Panel 1**) can be accessed by clicking KNApSAcK Core System in the main window.



KNApSAcK Core System

Link to Top page:
http://kanaya.naist.jp/knapsack_jsp/top.html

Incorporation to program:
[http://kanaya.naist.jp/knapsack_jsp/info.jsp?sname=\[item\]&word=\[keyword\]](http://kanaya.naist.jp/knapsack_jsp/info.jsp?sname=[item]&word=[keyword])
Here, [item] must be selected from one of the following words; "organism", "metabolite", "formula", "C_ID", and "CAS_ID".

< Example 1 >
Information on the metabolite assigned to C0000001 (a C_ID) can be retrieved by
http://kanaya.naist.jp/knapsack_jsp/info.jsp?sname=C_ID&word=C0000001

< Example 2 >
The reported metabolites in Bacillus (an organism) can be retrieved by
http://kanaya.naist.jp/knapsack_jsp/info.jsp?sname=organism&word=bacillus

Words for organisms or metabolites can be **retrieved by providing at least three characters** that forward matches with their strings.

CAUTION: (C) Any content included in KNApSAcK database cannot be re-distributed or used for commercial purposes by any user without contacting with KNApSAcK DB group (skanaya@gtc.naist.jp).

[Instruction Manual\(Japanese\)](#)  [Instruction Manual\(English\)](#) 

Select by ...
 ALL Types Organism Metabolite Molecular formula
 C_ID CAS_ID INCHI-KEY

last update	2015/10/13
metabolite	50899 entries
metabolite-species pair	111199 entries
species	22350 entries

Panel 1

(1) Search for metabolites by molecular information

To search information about a metabolite, users should select radio button corresponding to its name, molecular formula, C_ID (identifier in metabolites in KNApSAcK Core DB) or CAS_ID, and input corresponding information and then click the "List" button. For example, a user selects radio button Metabolite, inputs "Alliin", and clicked List button (**Panel 2**) then, **Panel 3** is obtained. Metabolite-species relations are listed when C_ID in Panel 3 is clicked (**Panel 4**).

Select by ...

ALL Types
 Organism
 Metabolite
 Molecular formula
 C_ID
 CAS_ID
 INCHI-KEY

Panel 2

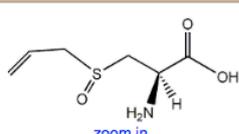
 input type = metabolite , input word = Alliin

Number of matched data : 1

C_ID	CAS ID	Metabolite	Molecular formula	Mw
C00001336	556-27-4	Alliin	C6H11NO3S	177.04596396

Panel 3

 input word = C00001336

Metabolite Information				Structural formula
Name	Alliin			 zoom in
Formula	C6H11NO3S			
Mw	177.04596396			
CAS RN	556-27-4			
C_ID	C00001336 			
InChIKey	XUHLIQGRKRUKPH-SVRVQNHINA-N			
Organism	Kingdom	Family	Species	Reference
	Plantae	Alliaceae	Allium cepa	Ref.
	Plantae	Alliaceae	Allium sativum	Ref.

Panel 4

(2) Search for Metabolites by species information

When a user selects radio button “Organism” and input a species name then they can obtain metabolite information. For example, a user selects radio button “Organism” inputs “Allium cepa”, and clicks List button (**Panel 5**) then, **Panel 6** is obtained. Metabolite-species relations are listed when a C_ID in Panel 6 is clicked.

Select by ...

ALL Types
 Organism
 Metabolite
 Molecular formula
 C_ID
 CAS_ID
 INCHI-KEY

Panel 5



input type = organism , input word = Allium cepa

Number of matched data : 55

C_ID	CAS_ID	Metabolite	Molecular formula	Mw	Organism
C00000001	545-97-1	Gibberellin A1	C19H24O6	348.1572885	Allium cepa
C00000004	468-44-0	Gibberellin A4	C19H24O5	332.16237388	Allium cepa
C00000008	7044-72-6	Gibberellin A8	C19H24O7	364.15220312	Allium cepa
C00000009	427-77-0	Gibberellin A9	C19H24O4	316.16745925	Allium cepa
C00000012	1164-45-0	Gibberellin A12	C20H28O4	332.19875938	Allium cepa
C00000015	13744-18-8	Gibberellin A15	C20H26O4	330.18310932	Allium cepa
C00000020	19143-87-4	Gibberellin A20	C19H24O5	332.16237388	Allium cepa
C00000034	32630-92-5	Gibberellin A34	C19H24O6	348.1572885	Allium cepa
C00000044	36434-15-8	Gibberellin A44	C20H26O5	346.17802394	Allium cepa
C00000051	56978-14-4	Gibberellin A51	C19H24O5	332.16237388	Allium cepa
C00000218	6894-38-8	(-)-Jasmonic acid	C12H18O3	210.12559444	Allium cepa
C00000747	1187-84-4	L-S-methylcysteine	C4H9NO2S	135.03539927	Allium cepa
C00001242	539-86-6	Alliin	C6H10O5S2	162.0173064	Allium cepa
C00001243	2179-57-9	Diallyl disulfide	C6H10S2	146.02239178	Allium cepa
C00001266	32157-29-2	Propanethial S-oxide	C3H6OS	90.01393554	Allium cepa
C00001267	107-03-9	Propane-1-thiol	C3H8S	76.03467099	Allium cepa
C00001366	556-27-4	Alliin	C6H11NO3S	177.04596396	Allium cepa
C00001389	23315-20-0	S-[(E)-Prop-1-enyl]-L-cysteine S-oxide	C6H11NO3S	177.04596396	Allium cepa
C00001495	73-03-0	Cordycepin	C10H13N5O3	251.10183932	Allium cepa
C00002374	7084-24-4	Cyanidin 3-O-glucoside	C21H21O11+	449.10838652	Allium cepa
C00002378	2611-67-8	Cyanin	C27H31O16	611.16120995	Allium cepa
C00002665	108-73-6	Phloroglucinol	C6H6O3	126.03169406	Allium cepa
C00002689	498-02-2	Acetovanillone	C9H10O3	166.06299419	Allium cepa

Panel 6

(3) Search for metabolites by metabolite and species information

In case of search for metabolite by a keyword related with both metabolite and species information, users should select radio button “All Types”, input a keyword, and click the list button. For example, a user selects radio button “All Types” inputs a keyword “alli”, and clicks the List button (**Panel 7**), then **Panel 8** is obtained. The targeted keyword is highlighted.

Select by ...

ALL Types
 Organism
 Metabolite
 Molecular formula
 C_ID
 CAS_ID
 INCHI-KEY

Panel 7



input type = all , input word = alli

Number of matched data : 957

C_ID	CAS_ID	Metabolite	Molecular formula	Mw	Organism or InChIKey
C00000001	545-97-1	Gibberellin A1	C19H24O6	348.1572885	Allium cepa
C00000004	468-44-0	Gibberellin A4	C19H24O5	332.16237388	Allium cepa
C00000008	7044-72-6	Gibberellin A8	C19H24O7	364.15220312	Allium cepa
C00000009	427-77-0	Gibberellin A9	C19H24O4	316.16745925	Allium cepa
C00000012	1164-45-0	Gibberellin A12	C20H28O4	332.19875938	Allium cepa
C00000015	13744-18-8	Gibberellin A15	C20H26O4	330.18310932	Allium cepa
C00000020	19143-87-4	Gibberellin A20	C19H24O5	332.16237388	Allium cepa
C00000034	32630-92-5	Gibberellin A34	C19H24O6	348.1572885	Allium cepa
C00000044	36434-15-8	Gibberellin A44	C20H26O5	346.17802394	Allium cepa
C00000051	56978-14-4	Gibberellin A51	C19H24O5	332.16237388	Allium cepa
C00000125	4356-52-9	Glucobrassicin	C16H20N2O9S2	448.06102171	Reseda crystallina
C00000149	6750-60-3	Spathulenol	C15H24O	220.18271539	Calli carpa americana
C00000149	6750-60-3	Spathulenol	C15H24O	220.18271539	Calli carpa japonica
C00000152	7400-08-0	p-Coumaric acid	C9H8O3	164.04734412	Calligonum leucocladum

Panel 8

A2 KNApSAcK Metabolomics Search Engine

Introduction

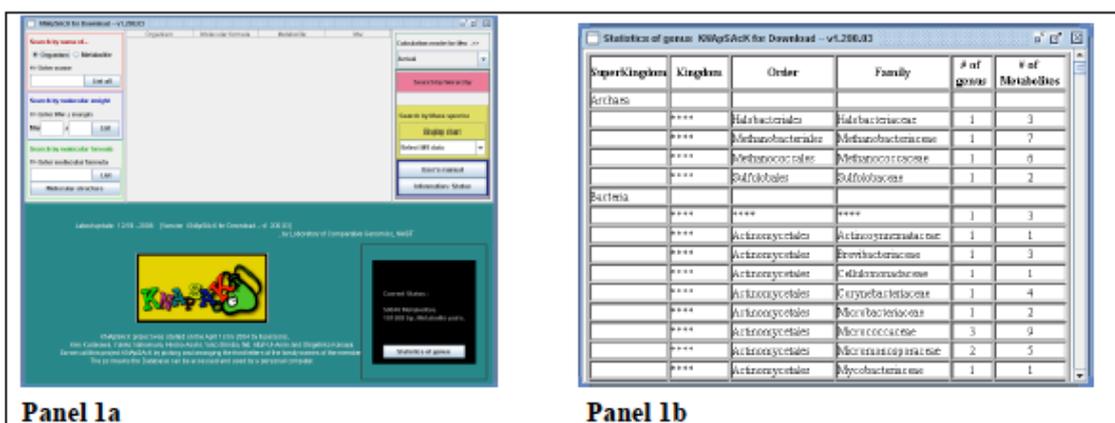
The KNApSAcK package when installed in the user's computer provides tool for analyzing his/her own datasets of mass spectra that are prepared according to a particular format, as well as for retrieving information on metabolites by entering the name of a metabolite, the name of an organism, molecular weight or molecular formula. A list of metabolites that are associated to a taxonomic class can be obtained by search with the taxonomic name, from which information of individual metabolites can be retrieved.

Installation of KNApSAcK database

If and when a user wants to customize KNApSAcK Metabolomics Search Engine to use for some purpose, Java j2sdk-1.4.2 is required to be installed in the user's computer. First, the compressed file, KNApSAcK_database.zip is to be downloaded from <http://kanaya.naist.jp/KNApSAcK/>. Under KNApSAcK_database folder, there are two folders (spectrum data and taxonomic files), and two files (KNApSAcK.jar and knapsack.gif). User can access KNApSAcK database by clicking KNApSAcK.jar.

1. Search Options of the KNApSAcK database

The Main window of KNApSAcK is shown in Panel Main. Information on metabolites contained in the database can be searched by entering the name of metabolite, organism (scientific name), molecular weight or molecular formula. The search result is listed in the middle of the upper half of the panel. The numbers of metabolites and metabolite-species relations compiled in the present version of the database are displayed in the lower right corner of the panel. Detail information of the accumulated data in the database, for example the number of metabolites and genus in each family can be retrieved by clicking "Statistics of genus" button (Panel 1b).



(1) Search by the name of metabolite or organism (Red panel in left side)

In case of search by organism (scientific name) or metabolite name, small and capital letters are not distinguished.

(1a) Search by the name of an organism (scientific name)

Select Organism (Step 1 in Scheme 1a), enter organism name (Step 2) and click the List button (Step 3). The entered organism name is matched to those in the database. Organism name can be the name of a species or a genus. If we input "Ara" then metabolites associated to species name with "ara" are listed. For example, metabolites associated to Arabidopsis thaliana, March macrocarpus and so on are listed.



Scheme 1a

(1b) Search by the name of a metabolite

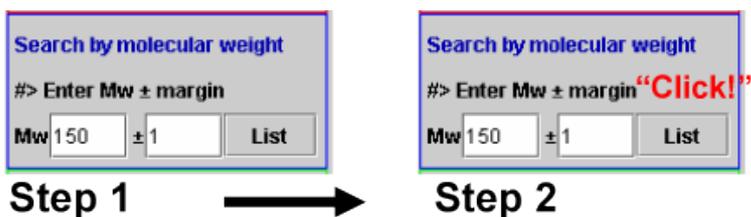
Select Metabolite (Step 1 in Scheme 1b), enter metabolite name (Step 2) and click the List button (Step 3). The entered metabolite name is matched perfectly to those in the database. If we input "glucose" then metabolites with "glucose" are listed. For example, ADP-D-glucose, D-glucose 6-phosphate and so on.



Scheme 1b

(2) Search by molecular weight (blue panel in left side)

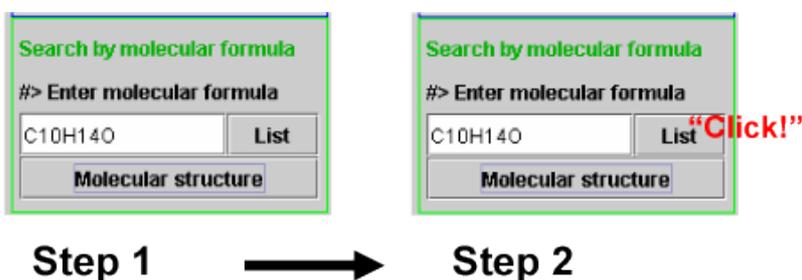
If we enter desired molecular weight (say 150) and a margin value (say 1) (Step 1 in Scheme 2), and click the List button (Step 2), the metabolites whose molecular weight are within the range 149-151 are listed.



Scheme 2

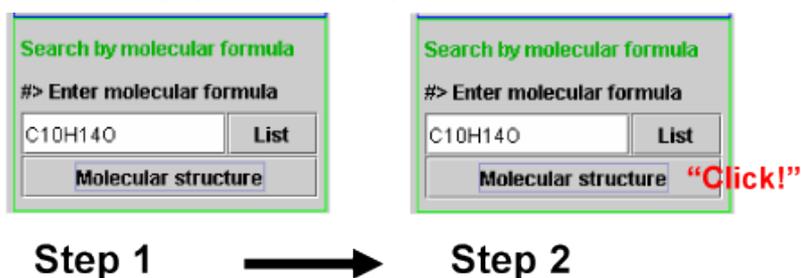
(3) Search by molecular formula

Metabolite names and origins of the metabolites are listed by molecular formula search. Enter molecular formula (Step 1 in Scheme 3a) and click the List button (Step 2).



Scheme 3a

When users are interested to know molecular structures corresponding to a molecular formula, molecular structure button should be clicked after entering the molecular formula and the molecular structure is displayed in a separate panel.

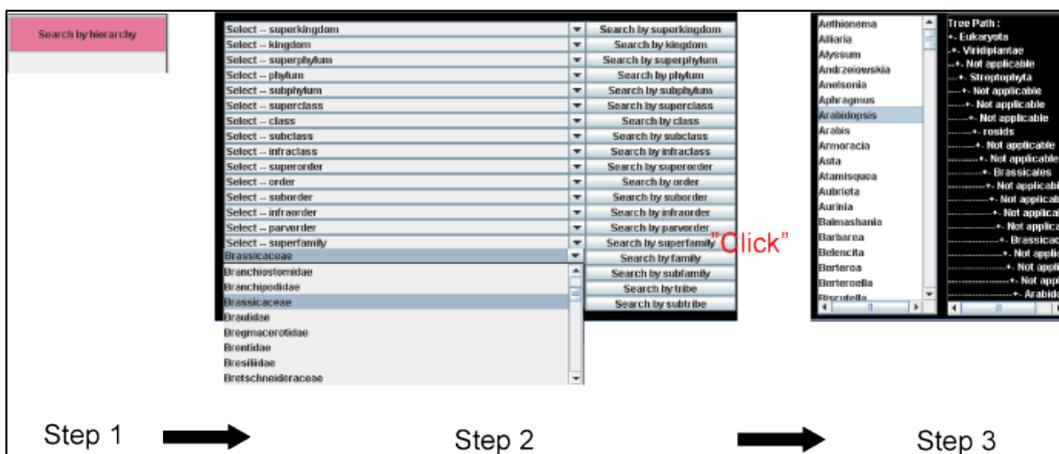


Scheme 3b

(4) Search by hierarchy

Click "Search by hierarchy" button (pink) in the right side of the panel (Step 1 in Scheme 4) and then hierarchy table appears in the bottom of the panel. Next, select any taxonomic name in any hierarchical level and click the Search button (Step 2), then genus names belonging to the selected taxonomy are listed on the right side. Next select a genus name (Step 3), then Organism names, Molecular formulae, Metabolite names and Molecular weights are listed in the upper panel. As an

example, when Brassicaceae under the taxonomic level of family is selected, the corresponding upper taxonomical levels are automatically assigned in the panel (Panel 2), that is, order, subclass, phylum, kingdom and superkingdom are automatically changed to "Brassicales", "rosids", "Streptophyta", "Viridiplantae" and "Eukaryota" respectively.



Scheme 4



Panel 2

(5) Search of compounds in mass spectra

Format of mass spectra data set

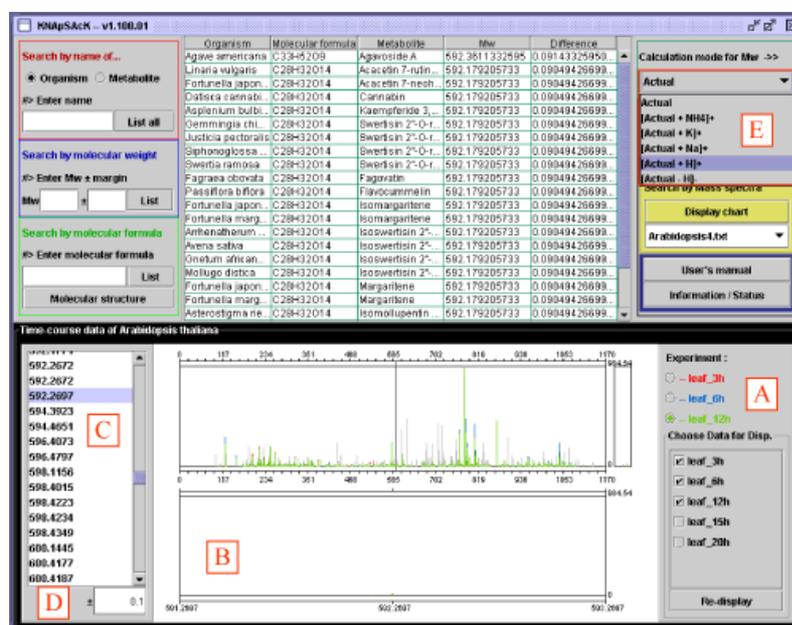
The data set must be constructed as a text file. The first line, comment line for mass spectra data, must be started by ":". The second line, attribute of individual mass spectra data, must also be started by ":". Each column is separated by a tab. The first column corresponds to m/z, and the second to last columns correspond to experimental conditions defined by user. Each line from the third to the last contains values of m/z and corresponding intensities in the individual experimental conditions. In the following example, Comment line is ":Arabidopsis T87 14days-Negative mode Scaling". In

the second line, ":Mean_Mass" is described by default, "Light", "Dark" and "Light_2" correspond to experimental conditions defined by user. The following lines contain m/z and corresponding intensities in Light, Dark and Light_2 conditions.

:Arabidopsis T87 14days-Negative mode Scaling	Light	Dark	Light_2
:Mean_Mass			
72.991712720809	0.149765559139204	0.166692818745594	0.151.....
73.657442634306	0.106314886454242	0.101988938554578	0.104.....
95.021470016800	0.087191317809083	0.000000000000000	0.095.....
95.512902956934	0.133837666739480	0.000000000000000	0.115.....
109.483588624006	0.198405127144166	0.298106748007966	0.200.....
.....
.....

Format of mass spectra data

KNAPSAcK_database folder contains two folders (spectrum data and taxonomic files), and two files (KNAPSAcK.jar and ReadMe(KNAPSAcK).txt). Save a file of mass spectra data with required format as described above to spectrumdata folder, then Click KNAPSAcK.jar. Select the file you want to analyze in Display chart (corresponding to Step 3 in Scheme 5a), then chart of mass spectra (Panel 3) is obtained.



Panel 3

Up to three spectra can be displayed and analyzed simultaneously by the proposed system. The spectra selected are overlaid with different colors and shown in the middle panel. Any spectrum can be brought to the front by spectrum selection (A in Panel 3). Any region of the spectra can be

enlarged by stretching the cursor horizontally and shown in the lower panel (B). All masses in the files are displayed on the left side of the panel (C). When a mass is selected from the list, a black vertical line pointer moves to the position of the peak of the mass on the spectra, and simultaneously possible metabolites corresponding to that molecular mass or masses close to that are shown in the upper panel. The margin value is changeable (D). As it is helpful to show the mass value with the value of an additive ion such as H⁺ and K⁺ depending on the solvent used for sample preparation, the species of additive ions are selectable (E). When a user set [Actual - H]⁻ in calculation mode for Mw and select a m/z value, 95.02147002, the database system regards the molecular weight without ionization as $96.0292951019 = 95.02147002 + \text{monoisotopic molecular weight for hydrogen ion (1.0078250319)}$ and retrieve metabolites corresponding to this molecular weight.

B. Multifaceted Plant Usage DB

Introduction

In Multifaceted Plant Usage DB, medicinal/edible plant are related to (B1) geographical zones where the plants are used (World Map DB); (B2) species-biological activity relationship DB (Biological Activity DB); (B3) formulas for Kampo in Japan (KAMPO DB); (B4) formulas for Jamu in Indonesia (JAMU DB); (B5) edible species DB (on going, Lunch Box); and (B6) medicinal/edible herbs (on going, TeaPot). B1 to B4 are documented in this manual.

B1. World Map DB

In World Map DB system, users can search for geographic zones by a targeted plant and search for plants by geographic zones.

(1) Search for geographic zones by a targeted plant

For example, when a user input “Allium cepa” and click show button (Panel 12), then national flags corresponding to geographic zones that use Allium cepa are blinked.



Panel 12

(2) Search for plants by a targeted geographic zone

When a user clicks on the nation flag of a geographic zone, then a list of medicinal/edible plants is obtained. Then by selecting KNApSAcK icon, users can obtain metabolites reported in a targeted species. In **Panel 13**, if Indonesia flag is clicked, then a list of medicinal plants utilized in Indonesia is obtained as shown in **Panel 14**. Then information on metabolites can be obtained by clicking the KNApSAcK icon “”.



Panel 13

Species Name	Purpose	Reference
Abelmoschus manihot 	medicinal	Roosita, J. Ethnopharmacol., 115, (2008), 72
Abelmoschus manihot (L.) Medik 	medicinal	Roosita, J. Ethnopharmacol., 115, (2008), 72
Abelmoschus moschatus (L.) Medic. 	medicinal	Atlas Tumbuhan Obat by dr. Setiawan Dalimartha (2000), Vol 2, ISBN 979-661-065-5.
Abelmoschus moschatus Medic. 	medicinal	Joshi, S.G., Medicinal Plants, Mohan Primiani for Oxfor & IBH Publishing Co. Pvt. Ltd., New Delhi (2003) 高橋達子, ジャムウ インドネシアの伝統治療薬、平河出版社(1988)[Takahasi, S., Traditional remedy of Indonesia, (1988), in Japanese] Utami, Buku Pintar Tanaman Obat, 431 jenis tanaman pengempur aneka penyakit, Redaksi AgroMedia, (2008)
Abrus fruticosus Wight & Arn. 	medicinal	de Padua et al. (1999), Plant Resources of South-East Asia 12, (1) Medicinal and poisonous plants 1, Bogor, Indonesia
Abrus precatorius	medicinal	Herbal Indonesia Berkhasiat by Bukti Ilmiah & Cara Racik, Vol 8, ISBN 979-688-236-6.
Abrus precatorius 	medicinal	JAMU in Indonesian Daily Life and Industry by Suwidjiyo Pramono Roosita, J. Ethnopharmacol., 115, (2008), 72
Abrus precatorius (L.) Wight. 	medicinal	Joshi, S.G., Medicinal Plants, Mohan Primiani for Oxfor & IBH Publishing Co. Pvt. Ltd., New Delhi (2003) 高橋達子, ジャムウ インドネシアの伝統治療薬、平河出版社(1988)[Takahasi, S., Traditional remedy of Indonesia, (1988), in Japanese] Roosita, J. Ethnopharmacol., 115, (2008), 72 Utami, Buku Pintar Tanaman Obat, 431 jenis tanaman pengempur aneka penyakit, Redaksi AgroMedia, (2008)

Panel 14

B2 Biological Activity DB

In Biological Activity DB system, users search for plants by a targeted biological activity.

(1) Search of Biological Activity by a species

Panel 15 is obtained by clicking Biological Activity in the main window. Users input species name in species name text box and click Search button, then a list of biological activity is obtained (Panel 16). Clicking KNApSAcK icon, users obtain metabolite information. Biological activities used in this system are downloadable from Dictionary of biological activity (shown in the middle of the window.)

Panel 15

Biological Activity : Number of matched data : 1

Search word : Allium cepa

種名	KNApSAcK Core Link	健康・薬用・効能
Allium cepa L.		Acne(にきび、痤疮(ざそう)) Adenosis(腺疾患、腺症) Allergenic(アレルギー生成) Amebicide(抗アメーバ薬) Anaphylaxis(過敏症[性]、アナフィラキシー) Angina(肩膜炎) Anorexia(食欲不振) Antiaggregant(抗血小板剤) Antiallergic(抗アレルギー) Antianaphylactic(抗アナフィラキシー) Antiasthmatic(抗ぜんそく) Antiatherosclerotic(抗アテローム硬化性) Antibacterial(抗菌) Antiedemic(抗浮腫性) Antihistaminic(抗ヒスタミン薬) Antiinflammatory(抗炎症) Antimitotic(抗有糸分裂) Antioxidant(酸化防止剤) Antiseptic(防腐剤) Antispasmodic(鎮痙薬) Antithromboxane(抗トロンボキサン) Antitoxic(抗毒素) Antitumor(抗腫瘍) Aphrodisiac(媚薬)

Panel 16

(2) Search for species by its related biological activity

In the page of Biological Activity, users input a biological activity (for example, Adrenergic) in biological activity text box (**Panel 17**) and click Search button, then a list of species is obtained (**Panel 18**).

Biological activity
健康・薬用・効能欄 キーワード検索 (英語、日本語-前方一致検索)

Adrenergic

Search Clear Page Clear

Input data :

Panel 17

Search word : Adrenergic , Alpha-2-adrenergic Inhibitor , Alpha-2-adrenergic agonist , Alpha-2-アドレナリン作動薬 , Alpha-2-アドレナリン阻害薬 , Alpha-adrenergic , Alpha受容体、アルファアドレナリン受容体 , Antiadrenergic , Noradrenergic , アドレナリン , ノルアドレナリン作動性 , 抗アドレナリン

種名	KNaPSSaCk Core Link
Annona squamosa	
Bupleurum chinense	
Capsicum spp.	
Corynanthe pachycera	
Ipomoea carnea	
Jatropha macrantha	
Maytenus ilicifolia	
Mimosa pudica	
Panax ginseng	
Pausinystalia johimbe	
Phyllanthus emblica	
Piper auritum	
Plectranthus barbatus	

Panel 18

B3. KAMPO DB

Introduction

In KAMPO DB system, users can search for medicinal plants by a blend name called a formula and search for a list of formulas by a targeted medicinal plant.

(1) Search for formula name by medicinal plant

KAMPO DB can be accessed by clicking KAMPO in the main widow. Users should select species names by clicking a box for a plant in Group List. The Group List is obtained by clicking [Group List] in Panel 19. By clicking a box corresponding to species name (for example, Schisandra chinensis is selected; Panel 20) and then clicking ok button, Schisandra chinensis is automatically written in Kanji character (Panel 21). After that by clicking search button, users can obtain a list of formulas (Panel 22; list of Kampo formula). When users select a formula in a list of Kampo formulae, then, information on blend herbal medicines can be obtained.

Take out "KAMPO" of KNApSACK

Information :
Firefox or Internet Explorer ONLY!
a.q.(適量)とは一日量0.5grから始めて一週間に0.25~0.5grきざみに増量し、3grを極量とする。
○は文献に分量の記載無し。
a.q indicates a quantity of prescription determined as follows; the initial quantity is 0.5 g/day and the quantity gradually increases at the unit of 0.25-0.5 g/day; and the max is 3 g/day..
Instruction Manual(Japanese) Instruction Manual(English)

生薬配合の漢方薬検索 [Group search of medicinal plants]
選択した生薬を含む漢方薬を表示します [You can select medicinal plants in Group List.]
検索対象: 「生薬名」: 完全一致検索
複数選択した場合、and検索の結果を表示します
同じグループとして登録された生薬すべての組み合わせで結果を表示します。
[1] Click Group List button.
In Group List,
[2] Check a box for a group of plants.
[3] Click ok button ("OK") (upper side of the window; you can easily move 'OK button' by clicking an arrow icon)
Then,
[4] Click search button("Group List")
'AND' search is supported if selecting multiple groups.

生薬・グループリスト [Group List]

直接入力できません。生薬リストから選択してください。

Search Clear Page Clear

生薬・グループリスト [Herb Group List]

生薬・グループ一覧 [Herb Group Name]	
<input type="checkbox"/> 瓜蒌根グループ	<input type="checkbox"/> 瓜蒌根 Trichosanthes kirilowii Maximowicz Trichosanthes kirilowii Maximowicz var. japonicum Klamura Trichosanthes bracteata Voigt <input type="checkbox"/> 栝楼根 Trichosanthes kirilowii Maximowicz Trichosanthes kirilowii Maximowicz var. japonicum Klamura
<input type="checkbox"/> 牡丹皮グループ	<input type="checkbox"/> 牡丹皮 Paeonia suffruticosa Andrews <input type="checkbox"/> 牡丹 Paeonia suffruticosa Andrews <input type="checkbox"/> 丹皮 Paeonia suffruticosa Andrews
<input type="checkbox"/> 桑白皮グループ	<input type="checkbox"/> 桑白 Morus alba Linne <input type="checkbox"/> 桑白皮 Morus alba Linne
<input type="checkbox"/> 桂枝グループ	<input type="checkbox"/> 桂皮 Cinnamomum cassia Blume <input type="checkbox"/> 桂枝 Cinnamomum cassia Blume <input type="checkbox"/> 桂枝去皮 Cinnamomum cassia Blume
<input type="checkbox"/> 五味子グループ	<input checked="" type="checkbox"/> 五味 Schisandra chinensis Billon <input type="checkbox"/> 五味子 Schisandra chinensis Billon

Panel 19

Panel 20

生薬配合の漢方薬検索 [Group search of medicinal plants]
 選択した生薬を含む漢方薬を表示します [You can select medicinal plants in Group List.]

検索対象：「生薬名」：完全一致検索
 複数選択した場合、and検索の結果を表示します
 同じグループとして登録された生薬すべての組み合わせで
 結果を表示します。

[1] Click Group List button.
 In Group List,
 [2] Check a box for a group of plants.
 [3] Click ok button ('OK') (upper side of the window; you can easily move 'OK button' by clicking an arrow icon)
 Then,
 [4] Click search button('Group List')
 'AND' search is carried out if selecting multiple groups.

生薬・グループリスト [Group List]

検索入力できる生薬名は生薬リストから選択してください。

五味

Search Clear Page Clear

Panel 21



INPUT WORD : 五味

生薬名 (漢字) [Herb Name (Kanji)]	生薬名 (カナ) [Herb Name (Kana)]	学名 [Scientific Name]	効能 [Efficacy]
五味	ゴミ	Schisandra chinensis Billon 	

Number of matched data : 1

漢方薬一覧 [List of Kampo formulae]

清肺湯 / セイハイトウ / seihaito

Panel 22

(2) Search for medicinal plants by a formula name

In search of medicinal plants corresponding to a targeted formula, a user should select the formula name by using the [Kampo List](Panel 23). An example of [Kampo List] is shown in Panel 24. The user should select one or more formula names by clicking radio button and click the “ok” button, then selected formula name is automatically written in the text box (Panel 25). Next, if the search button is clicked, then species included in the selected formulas are listed as Panel 26.

漢方薬配合表検索 [Medicinal plant search by a Kampo formula]

入力した漢方薬の生薬配合表を表示します

検索対象: 「漢方名 (漢字 or 全角カナ or ローマ字)」
完全一致検索
入力例: anchusan

You can select medicinal plants in Herb List.
[1] click Herb List button
In Herb List,
[2] check a box for a herb.
[3]click ok button ("OK") (upper side of the window; you can easily move in arrow icon)
Then,
[4] Crick search button. ("Kampo List")

漢方薬全件表示 [Kampo List]

Search Clear Page Clear

Panel 23

漢方薬リスト [Kampo List]

Number of Data : 336

Ok Clear

漢方薬名 Kanji : Kana : Scientific Name]

安栄湯: アンエイトウ: -

安中散: アンチュウサン: anchusan

安中散加茯苓: アンチュウサンカブリョウ: -

癩疔方: イショウホウ: ishoho

胃風湯: イフウトウ: ifuto

胃苓湯: イレイトウ: ireito

茵陳蒿湯: インチンコウトウ: inchinkoto

茵陳五苓散: インチンゴレイサン: inchingoreisan

烏頭桂枝湯: ウズケイシトウ: uzukeishito

烏頭赤石脂丸料: ウズシャクセキシガンリョウ: uzushakusekishiganryo

烏頭湯: ウズトウ: uzuto

温経湯: ウンケイトウ: unkeito

温清飲: ウンセイイン: unseilin

温胆湯: ウンタントウ: untanto

Panel 24

漢方薬配合表検索 [Medicinal plant search by a Kampo formula]

入力した漢方薬の生薬配合表を表示します

検索対象: 「漢方名 (漢字 or 全角カナ or ローマ字)」
完全一致検索
入力例: anchusan

You can select medicinal plants in Herb List.
[1] click Herb List button
In Herb List,
[2] check a box for a herb.
[3]click ok button ("OK") (upper side of the window; you can easily move in arrow icon)
Then,
[4] Crick search button. ("Kampo List")

漢方薬全件表示 [Kampo List]

安栄湯

Search Clear Page Clear

Panel 25

Take out "KAMPO" of KNAPSACK

漢方名 (Kampo Name)	生薬名 (Herb Name)	漢方名 (Kampo Name)	生薬名 (Herb Name)	学名 (Scientific Name)	効能 (Efficacy)	分業 (Div.)	性状 (Prop.)
安栄湯	オウゴン	蘇合香	蘇合香	Scutellaria Root	効能 (Efficacy)	分業 (Div.)	3
	黄連	オウゴン	黄連	Coptis Rhizome	効能 (Efficacy)	分業 (Div.)	2
	芍薬	オウゴン	芍薬	Coptis japonica Makino	効能 (Efficacy)	分業 (Div.)	2
	白芍薬	オウゴン	白芍薬	Coptis chinensis Franchet	効能 (Efficacy)	分業 (Div.)	2
	赤芍薬	オウゴン	赤芍薬	Coptis deltoidea C.Y. Franchet	効能 (Efficacy)	分業 (Div.)	1.5
	甘草	カンゾウ	甘草	Olychthiza	効能 (Efficacy)	分業 (Div.)	3
	コウジュ	コウジュ	コウジュ	Cyperus Rhizome	効能 (Efficacy)	分業 (Div.)	1.5
	芍薬	コウジュ	芍薬	Cyperus rotundus Linné	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Atachylodes Lanosa	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Atachylodes japonica Kitamura ex Kitamura	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Atachylodes ovata De Candolle	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Cnidium Rhizome	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Cnidium officinale Makino	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Rhubarb	効能 (Efficacy)	分業 (Div.)	1
	芍薬	コウジュ	芍薬	Rheum palmatum Linné	効能 (Efficacy)	分業 (Div.)	1
	芍薬	コウジュ	芍薬	Rheum tanguticum Maximowicz	効能 (Efficacy)	分業 (Div.)	1
	芍薬	コウジュ	芍薬	Rheum officinale Bailton	効能 (Efficacy)	分業 (Div.)	1
	芍薬	コウジュ	芍薬	Rheum conopsea Nakai	効能 (Efficacy)	分業 (Div.)	1
	芍薬	コウジュ	芍薬	Clove	効能 (Efficacy)	分業 (Div.)	0.5
	芍薬	コウジュ	芍薬	Syzygium aromaticum Merril et Perry	効能 (Efficacy)	分業 (Div.)	0.5
	芍薬	コウジュ	芍薬	Japanese Angelica Root	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Angelica acutiloba Nakagawa	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Ginseng	効能 (Efficacy)	分業 (Div.)	1.5
	芍薬	コウジュ	芍薬	Pinax ginseng	効能 (Efficacy)	分業 (Div.)	1.5
	芍薬	コウジュ	芍薬	Anaca, Anaca Nut, Beech Nut, Anaca Semen	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Anaca catechu Linné	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Sausurea Root	効能 (Efficacy)	分業 (Div.)	2
	芍薬	コウジュ	芍薬	Sausurea leppo Clarke	効能 (Efficacy)	分業 (Div.)	2
	芍薬	コウジュ	芍薬	Cinnamon Bark	効能 (Efficacy)	分業 (Div.)	3
	芍薬	コウジュ	芍薬	Cinnamomum cassia Blume	効能 (Efficacy)	分業 (Div.)	3

Panel 26

B4. JAMU DB

Introduction

In JAMU DB system, users can search for medicinal plants by a formula and search for a list of formulas by a targeted medicinal plant.

(1) Search for formula name by medicinal plant

JAMU DB can be accessed by clicking JAMU in the main window. Users should select species names by clicking a box for a plant in Group List. The Group List is obtained by clicking [Herb List] in Panel 27. By clicking a box corresponding to species name (for example, *Abelmoschus moschatus* is selected; Panel 28) and then clicking ok button, *Abelmoschus moschatus* is input in the text box (Panel 29). After that by clicking search button, users can obtain a list of formulas (Panel 30; list of JAMU formula). When users select a formula in a list of JAMU formulae, then, information on blend herbal medicines can be obtained.

Take out
"JAMU"
of **KNAPSACK**

Information :
Firefox or Internet Explorer ONLY!
Plural Searches Delimiter is " " or CR or LF
[Instruction Manual\(English\)](#)

Herb -> Jamu Search (Enter keyword is herbal medicine.) **Herb List** **ok** Clear

Jamu -> Herb Search (Enter keyword is Jamu.) **Jamu List**

example :

Panel 27

Number of Data : 1133
Herb List
 Abelmoschus moschatus Folium
 Abelmoschus moschatus Oleum
 Abrus precatorius Folium
 Acacia sieberiana Radix
 Acanthopanax senticosus Cortex
 Achillea santolina Folium
 Achyranthes aspera Folium
 Achyranthes aspera Radix
 Achyranthes bidentata Folium
 Achyranthes bidentata Radix
 Acori tatarinowi Rhizoma
 Acorus calamus Rhizoma
 Acorus gramineus Herba
 Actinidia chinensis Semen
 Actocarpus communis Folium
 Adenophora stricta Radix

Panel 28

Herb --> Jamu Search (Enter keyword is herbal medicine.) Herb List

Abelmoschus moschatus Folium

Search Clear Page Clear

Panel 29

Take out "JAMU" of KNAPsACK

INPUT WORD : Abelmoschus moschatus Folium

Herb Name	Herb Local Name(Indonesia)	Herb Local Name(English/Chinese)	Science Name	Position of Plants	effect
Abelmoschus moschatus Folium	Waron	MUSK-MALLOW, MUSK OKRA	Abelmoschus moschatus Medik.	Leaf	

Number of matched data : 3

Jamu formula : Company or Reference List

- PT. Bio-Life Medilab : Gioflam
- PT. Bio-Life Medilab : Pro - Ren
- PT. Wibowo Padmo Kencono : Patasari

Herb Name	Herb Local Name(Indonesia)	Herb Local Name(English/Chinese)	Science Name	Position of Plants	effect
Abelmoschus moschatus Oleum	Waron	MUSK-MALLOW, MUSK OKRA	Abelmoschus moschatus Medik.	Oil	

Number of matched data : 1

Jamu formula : Company or Reference List

- P.J. Sapta Sari : Minyak Sangkal Putung

Panel 30

Take out "JAMU" of KNAPsACK

Company or Reference	PT. Bio-Life Medilab														
Jamu Name	Gioflam														
Jamu Effect	-														
Jamu Effect Group	-														
Ingredient Herbs	<table border="1"> <thead> <tr> <th>Herb Name</th> <th>Herb Name(Indonesia)</th> <th>Herb Name(English/Chinese)</th> <th>Scientific Name</th> <th>Position of Plants</th> <th>effect</th> <th>Percent</th> </tr> </thead> <tbody> <tr> <td>Abelmoschus moschatus Folium</td> <td>Waron</td> <td>MUSK-MALLOW, MUSK OKRA</td> <td>Abelmoschus moschatus Medik.</td> <td>Leaf</td> <td></td> <td>100%</td> </tr> </tbody> </table>	Herb Name	Herb Name(Indonesia)	Herb Name(English/Chinese)	Scientific Name	Position of Plants	effect	Percent	Abelmoschus moschatus Folium	Waron	MUSK-MALLOW, MUSK OKRA	Abelmoschus moschatus Medik.	Leaf		100%
Herb Name	Herb Name(Indonesia)	Herb Name(English/Chinese)	Scientific Name	Position of Plants	effect	Percent									
Abelmoschus moschatus Folium	Waron	MUSK-MALLOW, MUSK OKRA	Abelmoschus moschatus Medik.	Leaf		100%									

Take out "JAMU" of KNAPsACK

effect

Herb List	
Herb Name	Abelmoschus moschatus Folium
Herb Name(Indonesia)	Waron
Herb Name(English/Chinese)	MUSK-MALLOW, MUSK OKRA
Scientific Name	Abelmoschus moschatus Medik.
Position of Plants	Leaf
Effect	Leaf: cough medicine. Seed: cosmetics raw materials.
Comment	-
Reference	Center Of Research And Development Of Plant Medicines And Traditional Medicine

(2) Search for medicinal plants by a formula name

In search of medicinal plants corresponding to a targeted formula, a user should select the formula name by using the [JAMU LIST](Panel 31). An example of [JAMU List] is shown in Panel 32. The user should select one or more formula names by clicking radio button and click the “ok” button, then selected formula name is automatically written in the text box (Panel 33). Next, if the search button is clicked, then species included in the selected formulas are listed as Panel 34.

Jamu --> Herb Search (Enter keyword is Jamu.) Jamu List

example :

Panel 31

Number of Data : 5310

Jamu Name	
<input checked="" type="radio"/>	Air Mancur : Jamu Anton - Anton Muda
<input type="radio"/>	Air Mancur : Jamu Anton Anton Tua
<input type="radio"/>	Air Mancur : Jamu Batuk
<input type="radio"/>	Air Mancur : Jamu Benkwat
<input type="radio"/>	Air Mancur : Jamu Bersalin
<input type="radio"/>	Air Mancur : Jamu Delima Putih
<input type="radio"/>	Air Mancur : Jamu Encok
<input type="radio"/>	Air Mancur : Jamu Gadung Klingsir
<input type="radio"/>	Air Mancur : Jamu Galian Param
<input type="radio"/>	Air Mancur : Jamu Galian Putri
<input type="radio"/>	Air Mancur : Jamu Galian Singset
<input type="radio"/>	Air Mancur : Jamu Harum Sari
<input type="radio"/>	Air Mancur : Jamu Kolasom

Panel 32

Jamu --> Herb Search (Enter keyword is Jamu.) Jamu List

example :

Panel 33



Company or Reference	Air Mancur						
Jamu Name	Jamu Anton - Anton Muda						
Jamu Effect	Eliminate nausea. Calming the mind for young pregnant women (up to 6 months)						
Jamu Effect Group	Female reproductive organ problems						
Ingredient Herbs	Herb Name	Herb Name(Indonesia)	Herb Name(English/Chinese)	Scientific Name	Position of Plants	effect	Percent
	Alpinia galanga Rhizoma	Laos	GREATER GALANGAL	Alpinia galanga SW. 	Rhizome		Incl.
	Amomum cardamomum Fructus	Kapulaga	CARDAMOM	Amomum cardamomum Willd	Fruit		Incl.
	Boesenbergia pandurata Rhizoma	Temu Kunci	-	Boesenbergia pandurata (Roxb.) Sch lecht 	Rhizome		Incl.
	Curcuma domestica Rhizoma	Kunyit	TURMERIC	Curcuma domestica Val 	Rhizome		Incl.
	Curcuma xanthorrhiza Rhizoma	Temu Lawak	TEMU LAWAK	Curcuma xanthorrhiza Roxb 	Rhizome		Incl.
	Zingiber aromaticum Rhizoma	Lempuyang Wangi	-	Zingiber aromaticum Val 	Rhizome		Incl.
	Zingiber officinale Rhizoma	Jahe	GINGER	Zingiber officinale Rosc 	Rhizome		Incl.
Zingiber purpureum Rhizoma	Bangle	-	Zingiber purpureum Roxb 	Rhizome		Incl.	

Panel 34

C. Cross-serach system (Skewered KNApSAcK)

(1) Cross search by species name

Skewered KNApSAcK makes it possible to search geographic usage, biological activity, and usage of Kampo and Jamu formulas by species name. Skewered KNApSAcK can be accessed by clicking Skewered KNApSAcK in the main widow (**Panel 35**). Users should input species name and then click Search button. Then geographic usage, biological activity, and usage of Kampo and Jamu formulas are listed as shown in **Panel 36**.

Panel 35

LunchBox : Number of matched data : 1
 Kampo : Number of matched data : 0
 Jamu : Number of matched data : 1
 WORLD : Number of matched data : 120
 Biological Activity : Number of matched data : 1
 TeaFor : Number of matched data : 1
 DietNavi : Number of matched data : 1

Search word : Allium cepa

種名	一般名	科名/国名	検索ヒットDB	健康・薬用・効能
Allium cepa .var. cepa		Thailand	WORLD	edible
Allium cepa L.			BiologicalActivity	Acne(にきび、痤疮(ざそう)) Adenosis(腺疾患、腺症) Allergenic(アレルギー生成) Amebicide(抗アメーバ薬) Anaphylaxis(過敏症性)、アナフィラキシー Angular(角膜炎) Anorexia(食欲不振) Antiaggregant(抗血小板剤) Antiallergic(抗アレルギー) Antianaphylactic(抗アナフィラキシー) Antiasthmatic(抗ぜんそく) Antithrombotic(抗血栓形成性) Antibacterial(抗菌) Antidemic(抗浮腫性) Antihistaminic(抗ヒスタミン薬) Antiinflammatory(抗炎症) Antimitotic(抗有糸分裂) Antioxidant(酸化防止剤) Antiseptic(防腐剤) Antispasmodic(解痙薬) Antithromboxane(抗トロンボキサン)

Panel 36

(2) Cross search by biological activity

In Skewed KNApSAcK, users can search for a list of species by a biological activity. Users should input species name in the text box and click Search button (**Panel 37**), then a list of species possessing the target activity (**Panel 38**). Then by clicking a species, users can obtain information about geographic usage, biological activity, and usage of Kampo and Jamu formulas by species name as same way of **(1) Cross search by species name**.

Biological activity
健康・薬用・効能欄 キーワード検索 (英語、日本語-前方一致検索)

Antibacterial | Input data :

Search Clear Page Clear

Panel 37

Search word : Antibacterial , 抗菌

種名	一般名	キーワードマッチDB	学名マッチDB
--	プロポリス	(N)	
Abelmoschus esculentus		(B)	(W) 📄 ⁹ 📄 ⁹
Acacia nilotica		(B)	(W) 📄
Acalypha arvensis		(B)	(W)
Acalypha indica		(B)	(W) 📄
Acer nikoense	Acer nikoense Maxim., Acer maximowiczianum[めぐずりのき、メグスリノキ、目薬の木、ちょうじゃのき、チョウジャノキ、長者の木、せんりがんのき、センリガンノキ、千里眼の木]	(L)	(W) 📄 📄 ⁸ 📄 ⁶
Achillea millefolium		(B)	(W) 📄 📄 ¹⁰ 📄 ¹⁰
Achyranthes aspera		(B)	(W) 📄
Acorus calamus		(B)	(W) 📄
Actrostaphylos uva-ursi		(B)	
Actaea racemosa		(B)	(W) 📄
Actaea spicata		(B)	(W) 📄

Panel 38

D. KNApSAcK

KNApSAcK project was started on the April 1st in 2004 by 6 persons, Ken Kurokawa, Yukiko Nakamura, Hiroko Asahi, Yoko Shinbo, Md. Altaf-UI-Amin and Shigehiko Kanaya. So we call this project KNApSAcK by picking and arranging the front letters of the family names of the members. The pc means the Database can be accessed and used by a personal computer. Currently many researchers have contributed to construct KNApSAcK Family and to accumulated data.

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