

Table S1. Top 10 chemicals obtained by searching 3D database

Rank	Name	Source plant	Fit value
1	Curtisian J	Paxillus curtisii	2.95072
2	Dichotomoside B	Stellaria dichotoma	2.94267
3	Quercetin-3-methyl-7-methyl ether-4'-sulfate	Ipomoea regnellii	2.93948
4	Styraxlignolide B	Styrax japonica .	2.9365
5	(2S,3S,1'S,2'R)-and(2S,3S,1'R,2'R)-2,3-Dihydro-5-(1',2'-di hydroxypropyl)-2-(4-hydroxy-3-methoxyphenyl)-7-met hoxy-3-methylbenzofuran	Aristolochia pubescens	2.93541
6	Hericenone F	Heridium erinaceus	2.93007
7	4''',5,5'',7''-Tetrahydroxy-3''',4',7-trimethoxy-3,6''-biflavo ne	Aristolochia ridicula	2.92876
8	Tinosposide B	Tinospora sinensis	2.92715
9	Triisofuhalol octaacetate	Chorda filum	2.9215
10	Manassantin A	Saururus chinensis , Houttuynia cordata, Saururus sp	2.91953

Table S2. The information of the protein templates

Title	Accession	Sequence length	Bit score	Identity	E-value	Organism
Eukaryotic elongation factor 2 kinase	6nx4_A	167	256.914	80	1.39E-81	Homo sapiens
Myosin heavy chain kinase A	3lkm_A	247	163.696	36	1.02E-45	Dictyostelium discoideum
Myosin heavy chain kinase A	3pdt_A	251	162.925	36	1.97E-45	Dictyostelium discoideum
Eukaryotic elongation factor 2 kinase	5ks5_A	103	154.451	80	2.91E-44	Homo sapiens

Table S3. Top 100 eEF2K inhibitor hits obtained by LibDock screening

Rank	Name	Source plant	LibDock Score
1	Umbilicaxanthoside B	Umbilicaria proboscidea	171.438
2	Revandchinone 1	Rheum emodi	169.069
3	Hyacinthin	Hyacinthus orientalis, Vitis vinifera	169.040
4	Bis-5, 5-nortrachelogenin	Wikstroemia indica	166.105
5	Scabroside	Gentiana scabra	165.151
6	Hymenoside B	Hymenophyllum barbatum	163.587
7	Woorenoside V	Coptis japonica	163.333
8	Fortunellin	Fortunella margarita, Fortunella crassifolia	160.992
9	Calyxin H	Alpinia pinnanensis	160.676
10	Alnuside C	Alnus japonica	160.113
11	-Catechin-3-O--D-glucopyranoside	Inga umbellifera	159.311
12	-3, 5-Dihydroxy-1- -7- heptane 5-O--D-glucopyranoside	Tacca chantrieri	158.687
13	Revandchinone 4	Rheum emodi	158.683
14	Blepharocalyxin C	Alpinia blepharocalyx	158.503
15	-Syringoylglycerol 9-O- --D-glucopyranoside	Hyssopus officinalis	157.202
16	Magnolignan I	Magnolia officinalis	156.208
17	2', 7-Dihydroxy-4'-methoxy-8-prenylflavan 2', 7-di-O--D-glucopyranoside	Morus alba , Morus alba	156.054
18	Kompasinol A	Maackia amurensis, Caragana tibetica	155.960
19	Cannabisin D	Hyoscyamus niger	154.383
20	Rhoifolin	Ligustrum robustum, Lamiophlomis rotata , Poncirus trifoliata, Poncirus trifoliata, Toxicodendron succedaneum , Trachelospermum jasminoides, Rhus sylvestris, Citrus aurantium	153.939
21	Odontoside	Odontites serotina	153.803
22	7-O- secologanolic acid	Lonicera japonica	153.227
23	Vitamin K2	Hippophae rhamnoides	152.964
24	Murramarin A	Murraya exotica	152.936
25	Oleoyl neocryptotanshinone	Salvia miltiorrhiza	152.634
26	Oleuropein	Fraxinus chinensis, Ligustrum lucidum, Fraxinus japonica,	152.589

		<i>Ligustrum japonicum,</i> <i>Olea europaea</i>	
27	Chrysophanol-8-O--D- -glucopyranoside	<i>Rheum hotaoense</i>	152.437
28	GarcinianoneB	<i>Garcinia multiflora</i>	151.613
29	Kuwanon P	<i>Morus macroura</i>	151.383
30	-3, 5, 4'-Trihydroxystilbene 3-O--D- glucopyranoside	<i>Eskemukerjea megacarpum</i>	151.353
31	3, 7-Dihydroxy-2, 5-diundecylnaphthoquinone	<i>Aegiceras corniculatum</i>	150.935
32	Muscanone	<i>Commiphora wightii</i>	150.518
33	Sanggenon G	<i>Morus mongolica , Morus alba</i>	149.677
34	-3, 5-Dihydroxy-1, 7-bis heptane 3-O--D-glucopyranoside	<i>Tacca chantrieri</i>	149.583
35	1, 2-Di-O-E-sinapoyl--glucopyranose	<i>Brassica napus</i>	149.544
36	6'-O--D-Galactopyranosylsyringopicroside	<i>Syringa amurensis</i>	148.996
37	Licuroside	<i>Glycyrrhiza sp</i>	148.674
38	Hordatine B	<i>Hordeum vulgare</i>	148.105
39	Seguinose F	<i>Glycosmis pentaphylla</i>	148.033
40	3, 5-Dihydroxy-stilbene-3-O-neohesperidoside	<i>Dryopteris sublaeta Poncirus trifoliata,</i>	147.885
41	Neohesperidin	<i>Citrus limon, Citrus unshiu, Citrus aurantium</i>	147.873
42	Quercetin-7-O- --glucopyranosyl- --rhamnopyranoside-3-O--glucopyranoside	<i>Aconitum napellus ssp neomontanum Poncirus trifoliata, Poncirus trifoliata, Poncirus trifoliata, Drynaria fortunei, Dryopteris crassirhizoma, Citrus limon, Citrus limon, Citrus par adisi,</i>	147.664
43	Naringin	<i>Flemingia strobilifera, Origanum vulgare, Citrus grandis, Citrus aurantium, Citrus aurantium, Citrus decumana, Citrus unshiu , Adiant um sp</i>	147.539
44	-2- -6, 7, 8-trihydroxy-5, 6, 7, 8-tetrahydro-5- chromone	<i>Aquilaria agallocha</i>	147.427
45	Mulberrofurane W	<i>Morus mongolica</i>	147.418
46	Lappal B	<i>Arctium lappa</i>	147.252
47	Cochinchinone A	<i>Cratoxylum cochinchinense</i>	146.839
48	Alnuside B	<i>Alnus japonica</i>	146.741

49	6", 7"-Dihydro-5', 5'''-dicapsaicin	Capsicum annuum	146.721
50	Ixerochinoside	Ixeris chinensis	146.680
51	Kukoamine A	Lycium chinense	146.606
52	3'-O-trans-Cinnamoyl-astilbin	Andira inermis	146.567
53	7-O-Methylaloeresin A	Aloe marlothii	146.472
54	3'-Prenyl-4'-methoxy-isoflavone-7-O'-D-glycopyranoside	Sopubia delphinifolia	146.377
55	10-Hydroxy-4-O-methyl-2, 11-diundecylgomphilactone	Aegiceras corniculatum	146.273
56	Hymenoside I	Hymenophyllum barbatum	146.213
57	Yemuoside YM1	Stauntonia chinensis	146.021
58	Hexaspermone C	Ochna macrocalyx, Ouratea hexasperma	146.006
59	Artocommunol CB	Artocarpus incisa	145.809
60	Salvianolic Acid B	Salvia miltiorrhiza	145.726
61	Urobilin	Homo sapiens	145.462
62	-3, 5, 3', 4'-Tetrahydroxystilbene 3-O--D-glucopyranoside	Eskemukerjea megacarpum	145.247
63	6"--D-Xylose-genistin	Glycine max	144.838
		Garcinia mangostana, Cinnamomum bejolghota, Pinus radiata, Davallia mariesii, Theobroma cacao,	
64	Procyanidin B5	Campylotropis hirtella, Aesculus hippocastanum, Cinnamomum cassia, Dioscorea cirrhosa, Pinus taeda Rheum sp, Salix caprea, Cinnamomum cassia, Pinus taeda,	144.626
65	Procyanidin B7	Vaccinium vitis-idaea, Cinnamomum camphora	
66	Diospyrosonaphthoside	Diospyros angustifolia	144.487
67	Ruixianglangdusu B	Stellera chamaejasme	144.466
68	Ruixianglangdusu A	Stellera chamaejasme	144.466
69	Silybin	Silybum marianum	144.431
70	Silybin B	Silybum marianum	144.431
71	AH21	Aquilaria agallocha	144.388
72	Procyanidin B5 3'-O-gallate	Vitis amurensis	144.233
73	Procyanidin B2-3"-O--D-allopyranoside	Pronephrium simplex	144.232
74	Saccatoside	Gmelina philippensis, Verbascum saccatum	144.225

75	Kushenol B	Sophora flavescens	144.147
76	Tenuiphenone C	Polygala tenuifolia	143.991
77	Ligustrosidic acid	Ligustrum lucidum	143.897
78	Protosappanin E1	Caesalpinia sappan	143.892
79	Protosappanin E2	Caesalpinia sappan	143.892
80	2-n-Pentacosyl-5, 7-dihydroxy-6, 8-dimethyl chromone	Sophora flavescens	143.735
81	Magnesium lithospermate	Cordia spinescens	143.675
82	-2- -6, 7, 8-trihydroxy-5, 6, 7, 8-tetrahydro-5- -chromone	Aquilaria agallocha	143.569
83	4-Methoxyphenyl 1-O--D- -apiofuranosyl- --D-glucopyranoside	Tabebuia impetiginosa	143.247
84	Odoratin	Gnidia lamprantha, Daphne odora	143.239
85	Alpinnanin A	Alpinia pinnanensis	143.052
86	Alpinnanin B	Alpinia pinnanensis	143.052
87	2-Methoxy-5- -phenyl-1-O- --D-glucopyranoside	Baseonema acuminatum	143.022
88	Calyxin L	Alpinia blepharocalyx	142.964
89	Tribulusamide B	Tribulus terrestris	142.940
90	Dimeric 4, 2', 4'-trihydroxydihydrochalcone	Agapanthus africanus	142.779
91	-ent-18- -Coumaroyloxy-8 -labden-15-oic acid	Nuxia sphaerocephala	142.774
92	Brachystamide C	Piper brachystachyum	142.771
93	Trifochalcanolide I	Trifolium alexandrinum	142.745
94	Hymenoside E	Hymenophyllum barbatum	142.696
95	Chrysophanol 8-O--D- glucopyranoside	Rheum qinlingense	142.689
96	Sigmoidin A	Erythrina abyssinica , Erythrina sigmoidea	142.667
97	Lappaol E	Arctium lappa	142.511
98	Violyedoenamide	Viola yedoensis	142.473
99	Epicalyxin I	Alpinia blepharocalyx	142.395
100	Hydroxygerambullol	Glycosmis chlorosperma	142.192

Note: The chemicals labeled in red, *i.e.*, Rhoifolin and Oleuropein, were selected for verifying the reliability of the screen.