#### Instruction manual for Disease-biomarker database

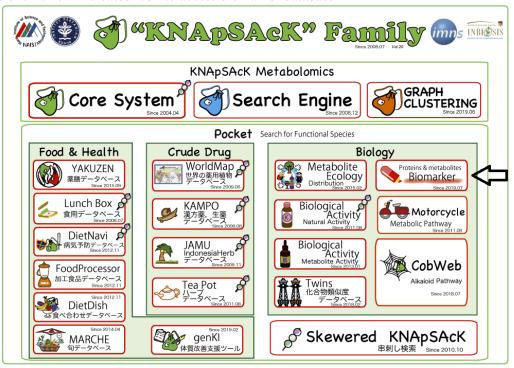
All data can be accessed, via the website

Database URL: <a href="http://www.knapsackfamily.com/Biomarker/top.php">http://www.knapsackfamily.com/Biomarker/top.php</a>

OR

KNApSAcK family URL: <a href="http://www.knapsackfamily.com/KNApSAcK\_Family/">http://www.knapsackfamily.com/KNApSAcK\_Family/</a>

Please click arrow indicated icon to access biomarker database



1. The default page or home page of the biomarker database

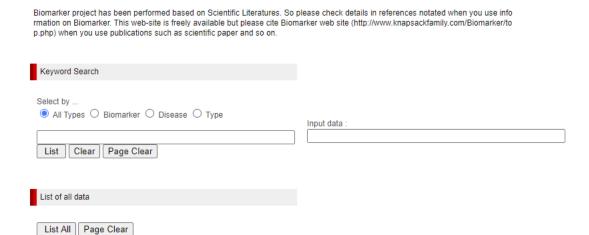
Search option

`**ਊ** Information

- a. To see all data (List all)
- b. Keyword base data search
  - i. All Types
  - ii. Biomarker
  - iii. Disease
  - iv. Type

knapsackfamily.com/Biomarker/top.php#res





# 2. To see all data of biomarker database, please click 'List All' menu



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Biomarker project has been performed based on Scientific Literatures. So please check details in references notated when you use info rmation on Biomarker. This web-site is freely available but please cite Biomarker web site (http://www.knapsackfamily.com/Biomarker/to p.php) when you use publications such as scientific paper and so on.

Keyword Search	
Select by  All Types  Biomarker  Disease  Type  List  Clear  Page Clear	Input data :
List of all data	
List All Page Clear click here	

# **Output**

Disease	Type	Reference
Respiratory	Metabolite	Dillon,H.K., Miller,J.D., Sorenson,W.G., Douwes,J., J acobs,R.R.Review of methods applicable to the asse ssment of mold exposure to children,Environ.Health Perspect.,vol.107 Suppl 3,1999
Infection and inflammation	Metabolite	Rennen,H.J., Corstens,F.H., Oyen,W.J., Boerman,O. C.New concepts in infection/inflammation imaging,Q. J.Nucl.Med.,vol.45,2001
Metabolic alterations in tumor cells	Metabolite	Czernin,J., Phelps,M.E.Positron emission tomograph y scanning: current and future applications,Annu.Re v.Med.,vol.53,2002
Systemic lupus erythematosus (SLE)	Metabolite	Bailuz,L., Philen,R., Ortega,L., Rosales,C., Brock,J., Barr,D., Kieszak,S.Investigation of systemic lupus er ythematosus in Nogales, Arizona,Am.J.Epidemiol.,vo l.154,2001
Cancer	Metabolite	Jackson,M.A., Stack,H.F., Rice,J.M., Waters,M.D.A.r eview of the genetic and related effects of 1,3-butadi ene in rodents and humans,Mutat.Res.,vol.463,2000
Cancer	Metabolite	Jackson,M.A., Stack,H.F., Rice,J.M., Waters,M.D.A.r eview of the genetic and related effects of 1,3-butadi ene in rodents and humans,Mutat.Res.,vol.463,2000
carcinoma	Metabolite	Hughes K;Meek ME;Walker M;Beauchamp R;1,3-But adiene: exposure estimation, hazard characterizatio n, and exposure-response analysis,J Toxicol Environ Health B Crit Rev,vol.6,2003
DNA damage	Metabolite	Moller,P., Knudsen,L.E., Loft,S., Wallin,H.The comet assay as a rapid test in biomonitoring occupational e xposure to DNA-damaging agents and effect of conf ounding factors,Cancer Epidemiol Biomarkers Prev., vol.9,2000
Cancer	Metabolite	Fustinoni S;Perbellini L;Soleo L;Manno M;Foa V;Biol ogical monitoring in occupational exposure to low lev els of 1,3-butadiene,Toxicol Lett,vol.149,2004
	Respiratory  Infection and inflammation  Metabolic alterations in tumor cells  Systemic lupus erythematosus (SLE)  Cancer  Cancer  carcinoma  DNA damage	Respiratory  Metabolite  Infection and inflammation  Metabolite  Metabolite  Metabolite  Systemic lupus erythematosus (SLE)  Metabolite  Cancer  Metabolite  Cancer  Metabolite  Cancer  Metabolite  DNA damage  Metabolite

3. By typing exact or partial string, the user can download desired 'all types' matching information. e.g. man



Output: (pink color matching string)

Keyword Search	
Select by	Search keyword display Input data: man
List of all data	
List All Page Clear	

Number of matched data : 58

Biomarker	Disease	Type	Reference
Bioactive/immunoreactive (B:I) human chorion gonadotropin ratio	Embryonic well-being	Metabolite	Lasley,B.L., Overstreet,J.W.Biomarkers for assessin g human female reproductive health, an interdisciplin ary approach,Environ.Health Perspect,vol.106 Supp I 4,1998
Bioactive/immunoreactive (B:I) human chorion gonadotropin ratio	failing pregnancies	Metabolite	Lasley,B.L., Overstreet,J.W.Biomarkers for assessin g human female reproductive health, an interdisciplin ary approach,Environ.Health Perspect.,vol.106 Supp I 4,1998
CD-54	Castleman's disease	Protein	Kim,J.E., Kim,C.J., Park,I.A., Kim,W.H., Seo,J.W., Ja ng,J.J., Kim,C.W., Park,S.H., Lee,H.S., Chi,J.G., Ki m,Y.I., Ham,E.K.Clinicopathologic study of Castlema n's disease in Korea,J.Korean Med.Sci.,vol.15,2000
Cell adhesion molecules (CAM)	Cognitive performance	Protein	Grootendorst, J., Oitzl, M.S., Dalm, S., Enthoven, L., S chachner, M., de Kloet, E.R., Sandi, C. Stress alleviate s reduced expression of cell adhesion molecules (N. CAM, L1), and deficits in learning and corticosterone regulation of apolipoprotein E knockout mice, Eur. J. N. eurosci., vol. 14, 2001
Chitinase-like protein YKL-40	Cystic fibrosis with pulmonary manifestations	Protein	Shao C, Li M, Li X, Wei L, Zhu L, Yang F, Jia L, Mu Y, Wang J, Guo Z, Zhang D, Yin, J, Wang Z, Sun W, Z hang Z, Gao Y, A tool for biomarker discovery in the urinary proteome: a manually curated human and ani mal urine protein biomarker database. Mol Cell Prote omics. 2011
Chlorpyrifos	Impairment on maze performance, locomotion, and	Metabolite	Eskenazi,B., Bradman,A., Castorina,R.Exposures of children to organophosphate pesticides and their pot ential adverse health effects,Environ.Health Perspec

4. By typing exact or partial string, the user can search desired matching 'biomarker' and its associated information e.g. Apolipo



# Output:

Number of matched data : 49

ned data : 49			
Biomarker	Disease	Type	Reference
APOA1 (apolipoprotein-A1)	Complications of kidney transplant	Protein	Shao C, Li M, Li X, Wei L, Zhu L, Yang F, Jia L, Mu Y, Wang J, Guo Z, Zhang D, Yin J, Wang Z, Sun W, Z hang Z, Gao Y. A tool for biomarker discovery in the urinary proteome: a manually curated human and ani mal urine protein biomarker database. Mol Cell Prote omics. 2011
Apolipoprotein A-I	Nephrotic syndrome with focal	Protein	Shao C, Li M, Li X, Wei L, Zhu L, Yang F, Jia L, Mu Y, Wang J, Guo Z, Zhang D,Yin J, Wang Z, Sun W, Z hang Z, Gao Y. A tool for biomarker discovery in the urinary proteome: a manually curated human and ani mal urine protein biomarker database. Mol Cell Prote omics. 2011
Apolipoprotein A-I	Malignant neoplasm of bladder	Protein	Shao C, Li M, Li X, Wei L, Zhu L, Yang F, Jia L, Mu Y, Wang J, Guo Z, Zhang D,Yin J, Wang Z, Sun W, Z hang Z, Gao Y. A tool for biomarker discovery in the urinary proteome: a manually curated human and ani mal urine protein biomarker database. Mol Cell Prote omics. 2011
Apolipoprotein A-I	Nephrotic syndrome	Protein	Shao C, Li M, Li X, Wei L, Zhu L, Yang F, Jia L, Mu Y, Wang J, Guo Z, Zhang D,Yin J, Wang Z, Sun W, Z hang Z, Gao Y. A tool for biomarker discovery in the urinary proteome: a manually curated human and ani mal urine protein biomarker database. Mol Cell Prote omics. 2011

5. By typing exact or partial string, the user can download desired matching 'disease' and its associated information. e.g. cancer

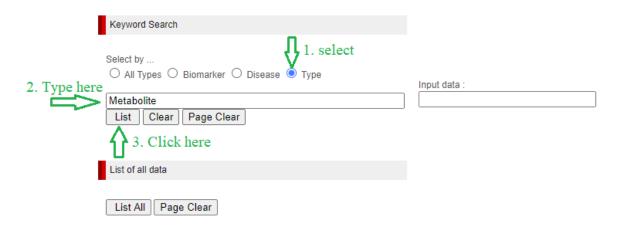


#### Output:

Number of matched data: 846

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Biomarker	Disease	Туре	Reference
1,2,3,4-diepoxybutane (DEB)	Cancer	Metabolite	Jackson,M.A., Stack,H.F., Rice,J.M., Waters,M.D.Ar eview of the genetic and related effects of 1,3-butadi ene in rodents and humans,Mutat.Res.,vol.463,2000
1,2-epoxy-3-butene (EB)	Cancer	Metabolite	Jackson,M.A., Stack,H.F., Rice,J.M., Waters,M.D.Ar eview of the genetic and related effects of 1,3-butadi ene in rodents and humans,Mutat.Res.,vol.463,2000
1,3-butadiene	Cancer	Metabolite	Fustinoni S;Perbellini L;Soleo L;Manno M;Foa V;Biol ogical monitoring in occupational exposure to low lev els of 1,3-butadiene,Toxicol Lett,vol.149,2004
1-hydroxypyrene	Cancer	Metabolite	Jongeneelen,F.J.Benchmark guideline for urinary 1-h ydroxypyrene as biomarker of occupational exposure to polycyclic aromatic hydrocarbons,Ann.Occup.Hy g.,vol.45,2001
1-hydroxypyrene	Cancer	Metabolite	Georgiadis,P., Kyrtopoulos,S.A.Molecular epidemiolo gical approaches to the study of the genotoxic effect s of urban air pollution,Mutat.Res.,vol.428,1999
1-hydroxypyrene glucuronide	Cancer	Metabolite	Phillips,D.H.Polycyclic aromatic hydrocarbons in the diet,Mutat.Res.,vol.443,1999
11beta-HSD2 enzyme	breast cancer	Protein	Krozowski,Z., Li,K.X., Koyama,K., Smith,R.E., Obey esekere,V.R., Stein-Oakley,A., Sasano,H., Coulter, C., Cole,T., Sheppard,K.E.The type I and type II 11b eta-hydroxysteroid dehydrogenase enzymes,J Steroi d Biochem.Mol.Biol,vol.69,1999

6. In this database, two types of biomarker i. Protein ii. Metabolite. To search 'type' base biomarker, e.g. Metabolite



# Output:

Number of matched data : 1224

Biomarker	Disease	Type	Reference
(1-3)-B-D-glucans	Respiratory	Metabolite	Dillon,H.K., Miller,J.D., Sorenson,W.G., Douwes,J., J acobs,R.R.Review of methods applicable to the asse sment of mold exposure to children,Environ.Health Perspect.,vol.107 Suppl 3,1999
(18)F deoxyglucose (FDG)	Metabolic alterations in tumor cells	Metabolite	Czernin,J., Phelps,M.E. Positron emission tomograph y scanning: current and future applications,Annu.Re v.Med.,vol.53,2002
(18)F deoxyglucose (FDG)	Infection and inflammation	Metabolite	Rennen,H.J., Corstens,F.H., Oyen,W.J., Boerman,O. C.New concepts in infection/inflammation imaging,Q. J.Nucl.Med.,vol.45,2001
1,1-dichloro-2,2-bis-(p-chorophenyl)ethylene	Systemic lupus erythematosus (SLE)	Metabolite	Balluz,L., Philen,R., Ortega,L., Rosales,C., Brock,J., Barr,D., Kieszak,S.Investigation of systemic lupus er ythematosus in Nogales, Arizona,Am.J.Epidemiol.,vo 1.154,2001
1,2,3,4-diepoxybutane (DEB)	Cancer	Metabolite	Jackson, M.A., Stack, H.F., Rice, J.M., Waters, M.D.Ar eview of the genetic and related effects of 1,3-butadi ene in rodents and humans, Mutat. Res., vol. 463,2000
1,2-epoxy-3-butene (EB)	Cancer	Metabolite	Jackson, M.A., Stack, H.F., Rice, J.M., Waters, M.D.Ar eview of the genetic and related effects of 1,3-butadi ene in rodents and humans, Mutat. Res., vol. 463,2000
1,3-Butadiene	carcinoma	Metabolite	Hughes K,Meek ME;Walker M;Beauchamp R;1,3-But adiene: exposure estimation, hazard characterizatio n, and exposure-response analysis,J Toxicol Environ Health B Crit Rev,vol.6,2003
1,3-butadiene	DNA damage	Metabolite	Moller,P., Knudsen,L.E., Loft,S., Wallin,H.The comet assay as a rapid test in biomonitoring occupational e xposure to DNA-damaging agents and effect of conf ounding factors,Cancer Epidemiol Biomarkers Prev., vol.9,2000