

A global evaluation of microarray dedicated databases

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	BASE	GeneTraffic	Resolver et Luminator	SMD	ArrayDB	ARGUS
Expression data type	All types	All types	All types	cDNA	All types	All types
Species limitation	No	No	No	S.cerevisiae, C.elegans, E.coli, H.sapiens, A.thaliana, D.melanogaster	No	No
Diagram availability	Yes	No	No	Yes	Yes	No
Software availability	Free	Commercial product	Commercial product	Free for the academics	Free for the academics	Free for the academics
Raw data management	Yes	Yes	Yes	Yes	Yes	Yes
Analysed data management	Yes	No en 2001	?	En cours	?	?
Image management	Yes	Yes	Yes	Yes (TIFF et GIF)	Yes	Yes
Experimental data management	Yes	Yes	?	Yes	Yes	No
Sample data management	Yes	Yes	?	Yes	Yes	No
MIAME compliance	Yes	Yes	No in 2002	Yes in futur development	No	No
Links to public databases	Yes	Yes	Poor	Unigene	Yes	Unigene
Tools	Analysis and visualization tools	Clustering tools	Clustering, pathway viewer	Xcluster and Treeview	Yes	No
OS	Linux	Linux	Linux	Sun Solaris, Linux	Linux	Windows NT, ME, 2000
DBMS	MySQL, PostgreSQL	PostgreSQL	Oracle	Oracle 8.0.6	Sybase	MS SQL server
Server	Apache	Apache	?	Oracle Server	?	Microsoft web server
API	Web	Web	?	web	web	web
Languages	Php, java, javascript, C++, Perl, R	R	java	Perl, C	Java, Perl	Visual basic
Exchange format in use	BaseFile	?	GEML MAGE-ML compatible	?	?	?
future exchange format		MAGE-ML	MAGE-ML	MAGE-ML	?	?
Input format	flat file	QuantArray, GenePix, ScanAnalyse, Affymetrix GeneChip microarray data	GEML or flat file	Genepix and Scanalyze	?	Pathways 3.0
Output format	GeneSpring throught ODBC, MAGE-ML, BaseFile	?	GEML or flat file	HTML, text	?	?
Publication	Lao H. Saal et al BioArray Software Environment: A Platform for Comprehensive Management et Analysis of Microarray Data <i>Genome Biology</i> 2002 3 (8): software0003.1-0003.6			Gollub J et al The Stanford Microarray Database: data access et quality assessment et Outils. <i>Nucleic Acids Res</i> 2003 Jan 1; 31 (1): 94-6	Ermolaeva O et al Data management et analysis for gene expression arrays. <i>Nat Genet.</i> 1998 Sep; 20 (1):19-23	J ason Comander et al. Argus - A new database system for web-based analysis of multiple microarray datasets. <i>Genom e Research</i> 2001 11(9):1603-1610

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	<u>Acuity</u>	<u>AMAD</u>	<u>NOMAD</u>	<u>GeNet</u>	<u>ArrayExpress</u>	<u>Gene X Lite</u>
Expression data type	cDNA	cDNA	cDNA	All data types	All data types	All data types
Species limitation	No	?	?	No	No	No
Diagram availability	No	No	?	No	Yes (MAGE-OM)	Yes
Availability	Commercial product	Free for the academics	Free for the academics	Commercaill product	Free, data repository	Free
Data management	Yes	Yes	Yes	Yes	Yes	Yes
Analysed data management	Yes	?	?	Yes	Yes	?
Image management	Yes (JPEG)	No	No	Yes	Yes	?
Experimental data management	Yes	No	No	Yes	Yes	Yes
Sample data management	Yes	No	No	Yes	Yes	Yes
MIAME Compliance	No	No	No	Yes	Yes	Yes
Public database links	Yes	No	?	GeneSpring	No	Yes
Outils	Yes	Cluster and Treeview	?	?	Expression Profiler	TIGR tools
OS	Windows 2000 or XP or NT	Linux, Windows, Mac OS X	Linux, Windows, Mac OS X	Windows	Unix	Linux, Sun Solaris, Mac OS X, Windows
DBMS	MS SQL server Free only for standalone version	None, flat file	Mysql	Oracle et fichier plat	Oracle	PostgreSQL, Oracle
Server	MS web Server	None	Apache	apache	Oracle Server	Apache
API	web		Web	web	?	web
Languages	Visual basic	Perl, javascript	Perl, java, javascript	Java	Perl, javascript	JAVA
Exchange format in use	?	?	?	?	MAGEML	?
Future exchange format	MAGE-ML	XML	XML	?		?
Input format	*.gpr and flat file	Genepix, scanalyze	GenePix	Genespring	MIAMEexpress	?
Output format	PDF, AVI	flat file	flat file	?	MAGE-ML	fichier plat, XML, HTML
Publication					ArrayExpress a public repository for microarray gene expression data at the EBI. A. Brazma et al Nucleic Acids Research, 2003, 31: 68-71	

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	<u>Maxd</u>	<u>READ</u>	<u>HugeIndex</u>	<u>RAD</u>	<u>MAPS</u>	<u>GEO</u>
Expression data type	All data types	RIKEN collection	Affymetrix	All data types (includes SAGE)	cDNA	All types de données et SAGE
Species limitation	No	Mus musculus	No	No	?	No
Diagram availability	Yes	No	Yes	Yes	No	?
Availability	Free	No	data repository	Free, data repository	Free for the academics	data repository
Raw data Management	Yes	No	Yes	Yes	Yes	Yes
Analysed data management	Yes	?	No	?	No	No
Image management	Yes	?	No	Links on Tiff images	?	No
Experimental data management	Yes	No	Yes	Yes	Yes	Yes (texte)
Sample data management	Yes	No	Yes	Yes	Yes	Yes (texte)
MIAME compliance	In Progress	No	Planned	Yes	No	Yes
Public database links	?	With FANTOM	Yes	Gus Platform	Yes	NCBI, genbank
Tools	MaxdView	RINGENE	GeneChip	No	No	NCBI Tools
OS	Solaris, Linux, Windows 98	Linux	?	Solaris	Windows	No
DBMS	Oracle, MySQL, PostgreSQL, Interbase	PostgreSQL	PostgreSQL	Oracle 8i and Sybase 11.9.2	Access	?
Server	JDBC server	Apache	?	?	IIS web server	?
API	JDBC client	web	web	web	web	web
Languages	Java	Perl, BioPerl, php, Shell	Java, Perl	Perl, PerlCGI et Java Servlet	Coldfusion, javascript	?
Exchange format in use	MaxdML, MAGE-ML, Text files	Flat-file format	flat file	?	HTML	?
Future Exchange format		?	MAGE-ML		?	?
Input format	MaxdML, Text files	scanalyze/PRIM, flat file	Affymetrix	web	web	web, fichier plat
Output format	MaxdML, MAGE-ML	Flat-file format	flat file	MAGE-ML	HTML	GeoXML
Publication		Bono H et al / READ: RIKEN Expression Array Database Nucleic Acids Research 30, 211-213 (2002)	Peter M. Haverly et al / HugeIndex: a database with visualization Outils for high-density oligonucleotide array data from nonnormal human tissues Nucl. Acids. Res. 2002 30: 214-217		Bushel PR et al / MAPS: A MicroArray Project System for Gene Expression Experiment Information et Data Validation. 2001. Bioinformatics 17, 564-565	Ron Edgar et al / Gene Expression Omnibus: NCBI gene expression et hybridization array entrepot de données Nucleic Acids Res. 2002 January 1; 30 (1): 207-210

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	<u>Mchips</u>	<u>ExpressDB</u>	<u>LIMas</u>	<u>Partisan Array LIMS</u>	<u>Genedirector 2</u>
Expression data type	All data types	Affymetrix, SAGE	All data types	All data types	All data types
Species limitation	No	S. cerevisiae et E. coli	No	No	No
Diagram availability	Yes	Yes	Yes	?	No
Availability	data repository	Free for the academics	Free for the academics	Commercial product	Commercial product
Raw data management	Yes	Yes	Yes	Yes	Yes
Analysed data management	Yes	?	No	Yes	Yes
Image management	No	No	Links on Tiff	Yes	Yes
Experimental data management	Yes	No	Yes	Yes	Yes
Sample management	Yes	No	Yes	Yes	Yes
MIAME compliance	Yes	No	Yes	Yes	?
Public database links	Yes	?	No	Yes	Yes
Tools	Analysis and normalisation	Clustering	none	?	Clonetracker, Imagen, GeneSight
OS	Solaris	Unix	Windows	Windows	Windows 2000
DBMS	PostgreSQL	Sybase	MySQL, Sybase and Oracle	Oracle 8i, Sybase	Oracle
Server	?	?	?	?	?
API	web	web	java package	Web	?
Languages	C, Perl, matlab	perl	Java	?	?
Exchange format in use	text format	tabulated fichier	?	PaXML	?
future exchange format	?	?	?	MAGE-ML	?
Input format	web	2 dimension tabulated format	flat file	Iconoclust, Aida, Quantarray, Imagen, Affymetrix MAS, GAL file, flat file	Compatible with most of the microarray distributors
Output format	text format	2 dimension tabulated file	?	flat file, GAL file	?
Publication	Fellenberg K et al Microarray data warehouse allowing for inclusion of experiment annotations in statistical analysis. Bioinformatics. 2002 Mar;18(3):423-33	Aach J et al Systematic management et analysis of yeast gene expression data. Genome Res. 2000 Apr;10(4):431-45			

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