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Patinformatics: Identifying Haystacks from Space

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Current Challenges in Patent Information Retrieval [View project](#)

Patinformatics: Identifying Haystacks from Space

Anthony J. Trippe
Sr. Staff Investigator,
Intellectual Property

Introduction

- What is Patinformatics
 - Definitions
 - Patent Intelligence
 - Patent Citation Analysis
 - Patent Mapping
 - Trippe's Law of Linear Patent Analysis

Introduction (Cont.)

- What is Patent Mapping
 - Manual Maps
 - Computer Generated Maps
 - Data Mining
 - Temporal Analysis
 - Co-Occurancy Matrix
 - From Structured/Fielded Data
 - Text Mining
 - Concept Mapping
 - Concept Clustering

Introduction (Cont.)

- Current List of Patent Intelligence Software, Resources and Websites
 - Aurigin Systems
 - Aureka Online System
 - ThemeScape
 - ClearForest
 - ClearResearch
 - ClearLab
 - ClearStudio

Introduction (Cont.)

- Current List of Patent Intelligence Software, Resources and Websites
 - IBM/Synthema
 - Technology Watch
 - Search Technologies
 - VantagePoint
 - Invention Machine Corporation
 - Knowledgist
 - Co-Brain
 - BizInt
 - SmartCharts for Patents

Introduction (cont.)

- Current List of Patent Intelligence Software, Resources and Websites
 - CAS
 - SciFinder Panorama
 - Wisdomain
 - Patent search and analysis modules
 - Delphion
 - Web site
 - In-house solution

Introduction (cont.)

- Current List of Patent Intelligence Software, Resources and Websites
 - IFI
 - Current Patents
 - www.patentcitations.com
 - www.patentvaluepredictor.com
 - www.firsttofile.com
 - MicroPatent
 - TEMIS
 - Online Miner

Introduction (cont.)

- Current List of Patent Intelligence Software, Resources and Websites - New Additions
 - OmniViz
 - The Metrics Group
 - New Strategic Alliance

What is Patinformatics?

- Patinformatics
 - the science of analyzing patent information to discover relationships and trends, which would be difficult to see when working with patent documents on a one-on-one basis. The term encompasses all forms of analyzing patent information including:

What is Patinformatics?

- Patent Intelligence - the use of patent information to identify the technical capabilities of an organization and the use of that intelligence to develop a strategy for strategic technical planning
- Patent Mapping - sometimes described as white space mapping, which uses published patent data to create a graphical or physical representation of the relevant art pertaining to a particular subject area or novel invention

What is Patinformatics?

- Patent Citation Analysis - the study of patent citations for potentially determining a patent's value or, perhaps more reliably, the identification of potential licensing partners or leads based on the citation of an organization's patents by another company in the same or a completely different market space
- Patinformatics can also cover additional applications of patent information involving a subsequent analysis step. The key underlying property in each of these diverse areas is the analysis step.

What is Patent Intelligence?

- Trippe's Law of Linear Patent Analysis
 - Create a tool kit of patinformatics tools
 - Understand the Need Behind the Need
 - The Need Drives the Question
 - The Question Drives the Data
 - The Data Drives the Tool
 - Why is this important?
 - To a man with a hammer, everything looks like a nail - avoid this at all costs

Focus on Patent Mapping

- Creating a physical representation of the relevant art pertaining to a particular subject area or novel invention
 - For identifying crowded art spaces
 - For discovering non-linear connections
 - For tracking patent-to-product projections for an organization
 - For technology licensing (In & Out)

Focus on Patent Mapping

- Manual Patent Mapping
 - Involves reading each patent document one at a time
 - Information is collected by using:
 - Spreadsheets
 - Word Processor tables
 - Flow charts
 - Butcher paper and sticky notes

Focus on Patent Mapping

- Computer Generated Maps
 - Relies on software to:
 - Group similar documents together
 - Build landscapes based on semantic concepts
 - Discover trends and do statistical analysis
 - Two types of mining activities:
 - Data Mining
 - Text Mining
 - Does not replace reading patents

Focus on Patent Mapping

- Data Mining
 - Relies on fielded (structured) data
 - Involves numerically based statistical analysis
 - Allows for temporal analysis
 - Clustering based on coding
 - Involves co-occurrence matrixes
 - STN's Analyze and Tabulate functions are an example as well as VantagePoint

Focus on Patent Mapping

- Text Mining

- Relies on unstructured or semi-structured data
- Term extraction takes place based on semantic based AI algorithms
- Documents containing overlapping concepts can be organized together
- Documents containing overlapping concepts can be placed together spatially

Current List of Patent Intelligence Software, Resources and Websites

Software, Resources and Websites

- Patinformatics Software
 - Aurigin Systems (www.aurigin.com)
 - Aureka Online System (AOS)
 - Organize Documents & Knowledge
 - Run Reports
 - Citation Viewer
 - ThemeScape
 - Concept Maps
 - Temporal Analysis

Aureka Online System

Start | Aureka Online Services - Microsoft Internet Explorer | 4:25 PM

File Edit View Favorites Tools Help

Address: http://webervault74/afid/aos_app_main.asp

aureka Gold online services | home | admin | support | log out

Patent Search | Citation Tree | Preferences | MapManager | Reports

Document List | Action | Selection | Application | Help | List View | Concise View | Details View | Properties

GOLD

- Agauron Project
 - Citation Trees
 - cite_fwd1_back1_53
 - Doc Lists and Queries
 - Agauron_Assignee
 - Agauron_Assignee
 - Thesis Maps
 - Agauron_Assignee
 - Agauron_Assignee
 - Vivimo Objects
 - Vivimo_Subcluster
 - Vivimo_cluster_1.0
 - Project Folders
 - cite_fwd1_back1_5136671
 - cite_fwd1_back1_5136671
 - Administrators
 - Everyone
 - Temporary Objects

How to select documents: [icon]

How to open documents: [icon]

218 Document(s) Results 1 - 5 | No documents selected. | Page 1 of 44

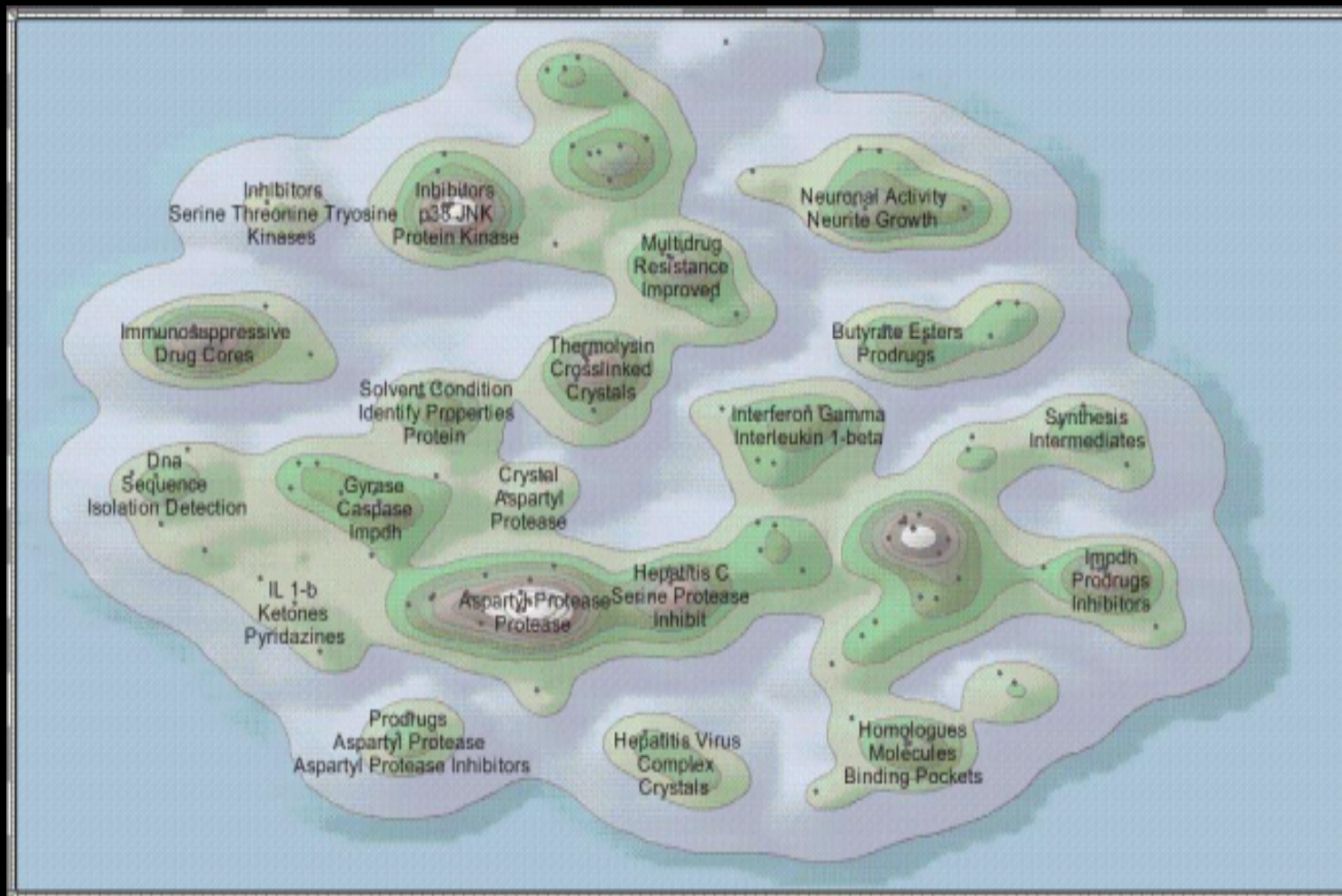
Document ID EP 0 295 719 A2

Title THE SM-D ANTIGEN, THE CLONING OF THE SM-D ANTIGEN AND THE DETECTION OF SYSTEMIC LUPUS ERYTHEMATOSUS BY USING THE SM-D ANTIGEN

Abstract smRNP proteins are isolated, as by immunoaffinity chromatography, using antibodies from a serum sample of a living being affected by systemic lupus erythematosus. The Sm-D polypeptide is in turn isolated from the smRNP protein complex as by gel electrophoresis and electroelution. The amino terminus of the Sm-D polypeptide is then sequenced, and labelled DNA probes with nucleotide sequences complementary to that encoding the amino acid sequence are synthesised. A human cDNA library in a lambda cloning vector is transferred to appropriate filters such as nitrocellulose filters. These filters are screened as by hybridization with the labelled probes to identify the cDNA clones in the library with sequences matching those of the labelled probes. The cDNA encoding the Sm-D protein is then subcloned. The Sm-D polypeptide is then isolated as by immunoaffinity chromatography and, if further desired, as by HPLC chromatography. An assay is then made with the isolated Sm-D polypeptide by reacting the Sm-D polypeptide with a serum sample of a living being to determine whether the living being is affected by systemic lupus erythematosus.

Done | Local intranet

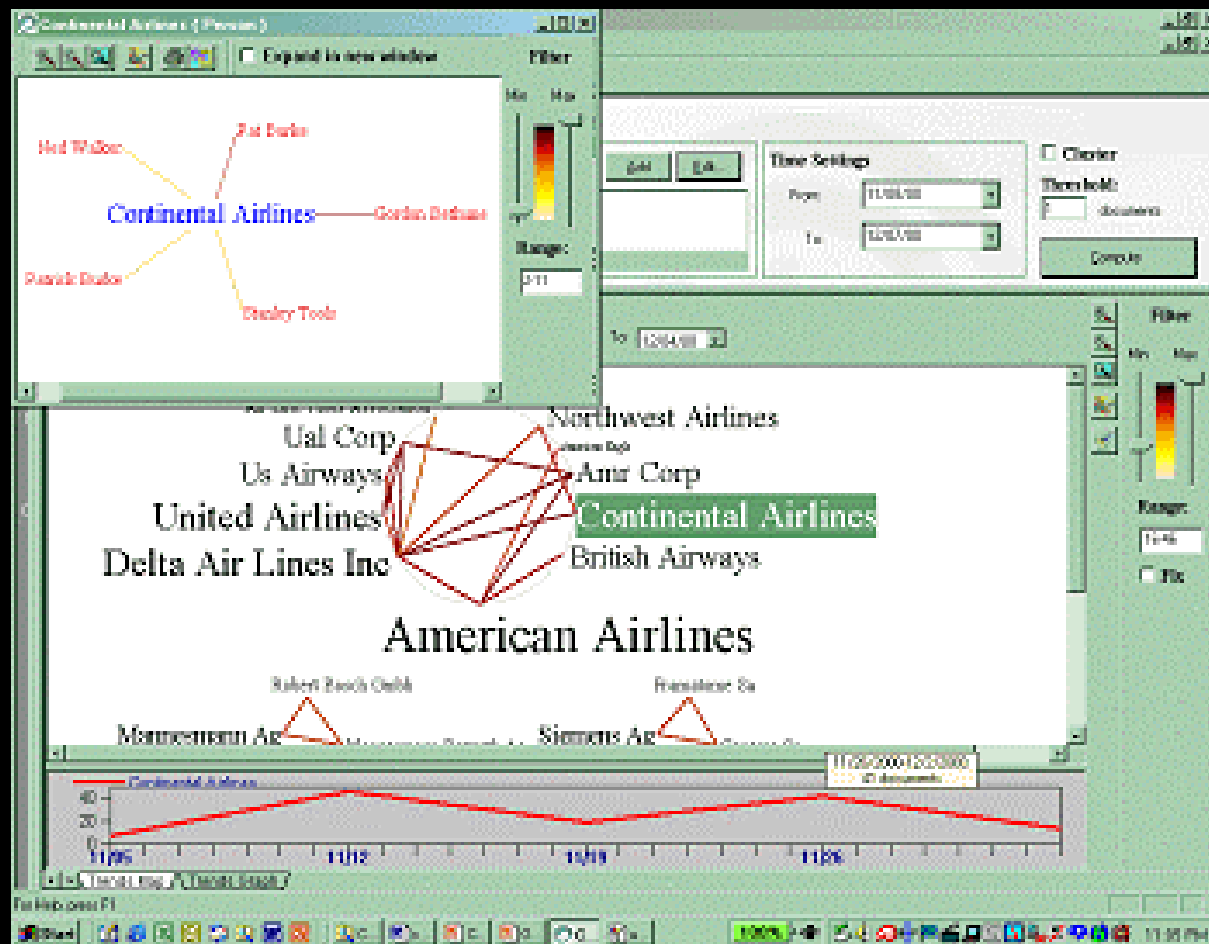
ThemeScape



Software, Resources and Websites

- Patinformatics Software
 - ClearForest (www.clearforest.com)
 - ClearResearch
 - Provides charts and graphs for deep insight into document taxonomies
 - Temporal and Circle graphs
 - ClearStudio
 - Wizard driven Association Rules generator
 - ClearLab
 - Visual C++ Association Rules generator

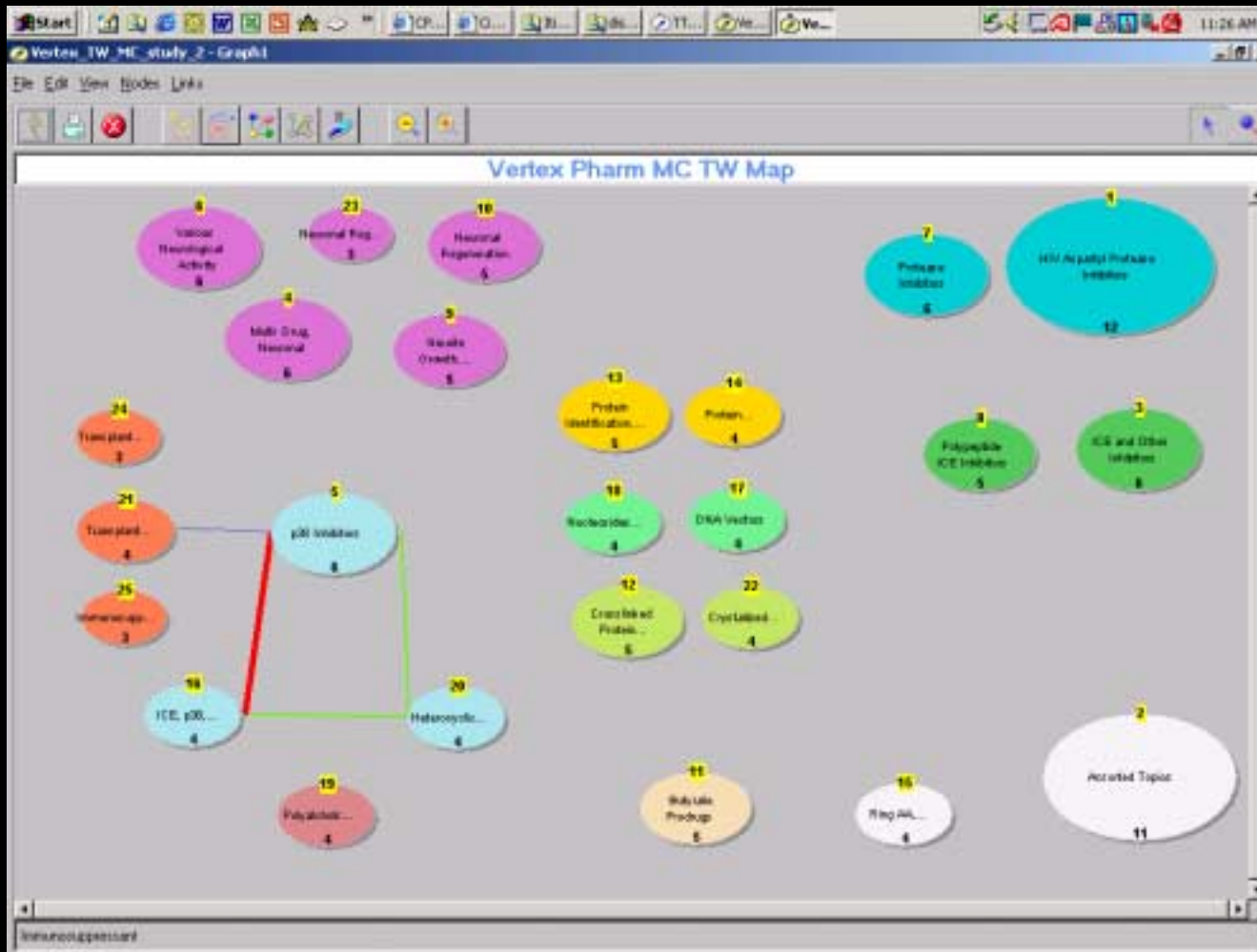
ClearResearch



Software, Resources and Websites

- Patinformatics Software
 - IBM/Synthema
(www.synthema.it/english/index.html)
 - Technology Watch
 - Co-coding clustering
 - Co-assignee clustering
 - From structured/fielded data
 - Search Technologies
(www.thevantagepoint.com)
 - VantagePoint
 - Temporal analysis
 - Co-occurrence matrix
 - From structured/fielded data

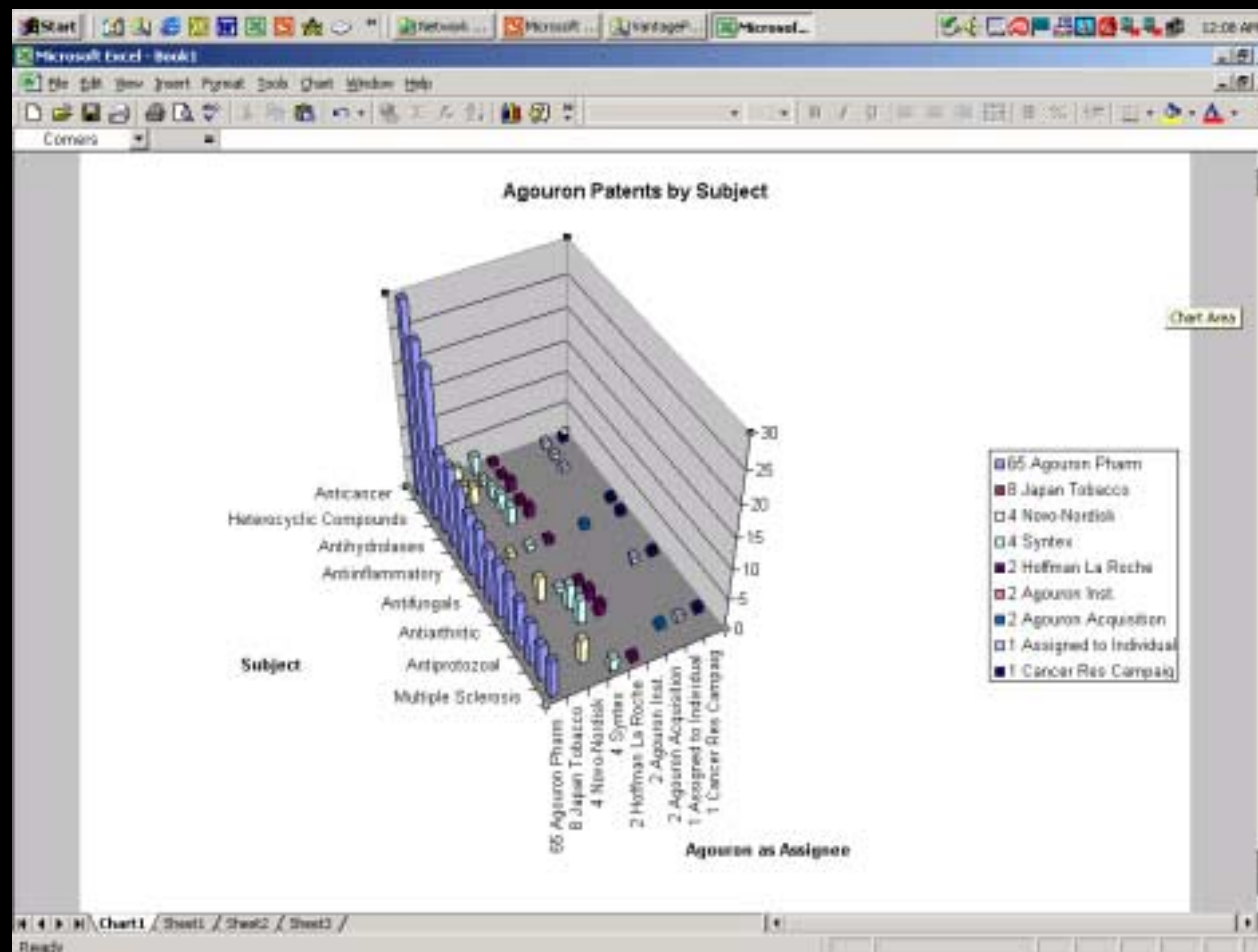
Technology Watch



VantagePoint

The screenshot shows a Windows 95 desktop with several open applications. The primary application is 'VantagePoint - (traps)', which displays a database interface. On the left side of the application, there is a list of chemical compounds, including '5-Substit. 2-amino-6-oxo-1-methyl-4-oxo-2-thio-guanidine', 'New 5-thio-α-seleno-amine', 'New N (4,5-d-substit. the', 'New N-adj. methyl N-adj.', 'New N heterocyclic-subst', 'New N substituted per hy', 'New azathi cyclic cpds', 'New decahydroisoquinol', 'New glutamate pyrimidine', 'New heterocyclic deivola', 'New heterocyclic-acetylglu', 'New inhibitors of glycine', 'New oxo-morpholine carb', 'New pyridine-thiazine, ox', 'New quinoxaline cpds', 'New selenium-containing', 'New substit. naphthalene', 'New thioephene, furan or l', 'Prepn. of new fused hole', and 'Prepn. of optically pure a'. The main area of the application is a large matrix titled 'Investigator (Cleaned)'. The matrix has 28 columns, numbered 1 to 28, and 28 rows, numbered 1 to 28. The rows are labeled with investigator names: VANNEY, M.D.; PALMER, C.L.; ROMMES, W.H.; REICH, S.H.; SCHENK, S.L.; WERTER, S.E.; WARTEN, K.T.; ALBANI, H.F.; LING, A.L.; DRAGOVICH, P.S.; PRINS, T.J.; DEAN, J.D.; BUSSE, J.H.; REMARCHUK, J.P.; SZENECRDI, R.J.; JONES, T.R.; TRUESDALE, L.H.; HONG, Y.; DEASON, M.E.; MADSEN, P.; LAI, J.; HEL, D.; CASTELHANO, A.L.; BABU, S.; BOYER, B.C.; SAMS, C.; TENG, M.; and HUNG, A. The matrix contains numerical data (1-5) and some cells are shaded gray. At the bottom of the application window, there is a status bar with the text 'Metric: Investigator (Cleaned) Investigator (Cleaned) List: Manual Cook'. The desktop background is a blue gradient with several icons, including 'Recycle Bin', 'My Computer', 'Network', 'Microsoft Word', 'VantageP...', and 'Vantage...'. The taskbar at the bottom shows the 'Start' button and several open applications.

VantagePoint



Software, Resources and Websites

- Patinformatics Software
 - Invention Machine Corporation (www.invention-machine.com/)
 - Knowlegist
 - Creates Subject/Action/Object functions from the full-text of technical documents
 - Runs on personal data collections
 - Co-Brain
 - Also creates SAO functions
 - Work as a corporate portal

Knowledgist

Search

☐ Search in Previous Search

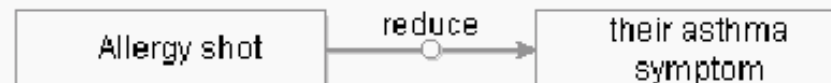
75 from 75 available

Reset

Problems

Solutions

- decrease - asthma symptom
 - Barrier
 - Buteyko
 - counselor
 - Immunotherapy
 - Pulmicort
 - shot
 - specific exercise
- decrease - asthma attack
- decrease - severity
- decrease - ASTHMA



Concept: Allergy shot - reduce - their asthma symptom

Allergy shots could help millions of adults and children with allergic asthma control or **reduce their asthma symptoms**, improve their lung function and decrease their reliance on medication, according to a study published in the April 2000 ...

[Allergy Shots Help Children and Adults with Asthma](#)


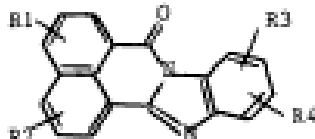

Knowledgist arranges information in an intuitive problem-solution format and displays links to the full document.

Software, Resources and Websites

- Patinformatics Software

- BizInt (www.bizcharts.com/sc4pats/)
 - SmartCharts for Patents
 - Reporting tool
 - CA, IFI & WPI
 - Dialog or STN input
- Chemical Abstracts Service (www.cas.org/SCIFINDER/)
 - Scifinder Panorama
 - Creates a 2-D Grid allowing chemical structures to be compared to CAS indexing

SmartCharts

	Title	Patent Assignee	Image
1	New thio-substd. bis-oxazole deriv. dyes - absorbing throughout the near infrared, useful in laser applications such as recording systems and cancer treatment.	STERLING DIAGNOSTIC IMAGING INC (STER)	
2	New fused benzo isoquinolinone derivs. useful for treating neoplasms - are e.g. 10-amino-2-(di methylamino) -7H-benzimidazo (2,1-a)benz (de)isoquinolin-7-one..	LILLY & CO ELI (ELIL)	
3	New bis cyclo-alkylidene ethane dyestuff cpds. - useful as photopolymerisation initiator, in electrophotography or in photo dynamic therapy of tumour.	BASF AG (BADI)	

SciFinder Panorama

Get References Frequency Sort 100% Magnification Sort Row or Column

AA6 = 0

Book1

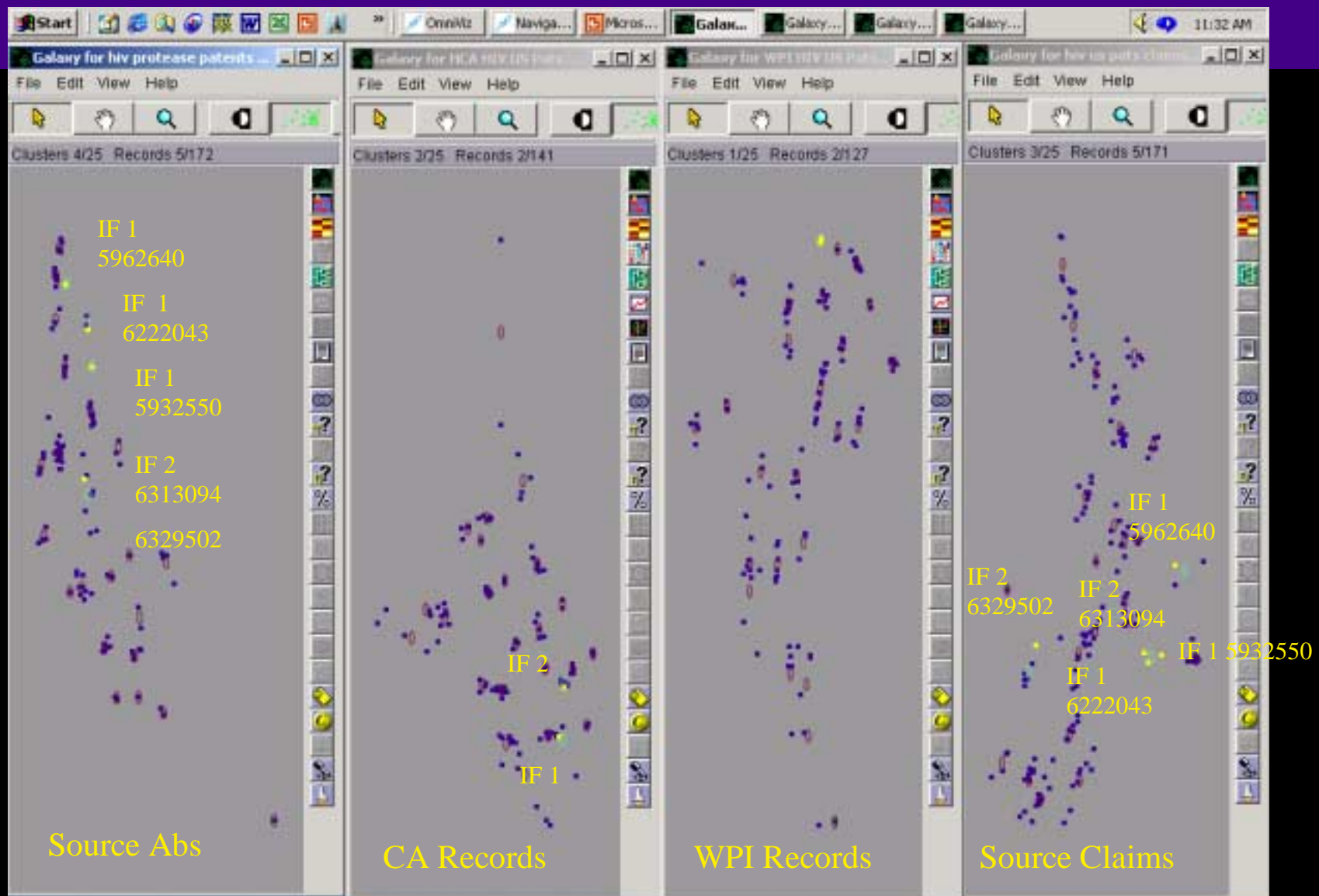
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Allergens	Immunoglobulins	Immunoglobulins, E	Antibodies	Gene, animal	mRNA	Proteins, specific or class	Histamine	Interleukin 4	Interleukin 5	Cytokines	Probes (nucleic acid)	PN: WO9955913 PAGE: 91 unclaimed DNA	65: PN: WO9963085 SEQID: 109 unclaimed DNA (9C)
2	Pollen	52	24	14	10	6	6	4	7	3	3	1	6	6	6
3	T cell (lymphocyte)	10	13	2	8	10	9	5	3	7	5	7	7	7	7
4	Nose	6	6	1	4			7	6	1	2	3			
5	Eosinophil	7	5	2	1	1	1	3	3	3	7	1			
6	Basophil	2	3	4				1	6						

Cross-tab

Software, Resources and Websites

- Patinformatics Software
 - OmniViz Corporation
(www.omniviz.com)
 - OmniViz
 - Text analysis
 - Cheminformatics
 - Gene Expression
 - Spun off from Battelle
 - Shares lineage with ThemeScape but more advanced, functional and customizable

OmniViz



Software, Resources and Websites

- Patinformatics Resources
 - IFI Claims (www.ificlaims.com)
 - Patent Intelligence and Technology Report
 - Detailed statistics on over 1,600 companies
 - Ranking of companies by granted US patents
 - Distribution of patents by company over US classification

Patent Intelligence and Technology Report

IFI CLAIMS Patent Services

Patent Intelligence & Technology Report

001-099

[001-099](#) [100-199](#) [200-299](#) [300-399](#) [400-499](#) [500-599](#) [600-699](#) [700-799](#) [800-899](#) [900-999](#)
[Contents Page](#)

004 - BATHS, CLOSETS, SINKS, AND SPITTOONS
[1](#)

029 - METAL WORKING
[1](#)
[1](#)
[1](#)



Software, Resources and Websites

- Patinformatics Resources
 - Current-Patents (www.current-patents.com)
 - Dolphin
 - Drug Patents 2001
 - Current Trends in Pharmaceutical Discovery
 - Gazette

Grab File Edit Capture Window Help Thu 6:18 PM

Address: http://www.current-patents.com/products/index.htm

Products of Current Patents, Current Patents ...

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Internet zone

Current Patents

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Our Products

Gazette

The **Current Patents Gazette** is a weekly publication providing extremely rapid alerting to newly published pharmaceutical inventions. Our expert analysts add comment and context, alongside front page images of the most important documents.

DP2001

Drug Patents 2001 is a reference tool based on the statistical analysis of patents in the pharmaceutical and biotech field. The information and indexing is drawn from the last five years of Current Drugs' Patent fast alert, supplemented by detailed bibliographic data from INPADOC. There are more than 47,000 patents in the five-year analysis, including some 8,000 published during the year 2000.

Dolphin

This database, to be launched in December, aims to provide comprehensive coverage of all patents likely to be of interest to pharmaceutical companies.

[Register here for a free evaluation of Dolphin](#)

Trends

Current Trends in Pharmaceutical Discovery reports in-depth employ sophisticated data mining techniques to analyse large data sets relating to particular aspects of pharmaceutical discovery and development activity. Six topics are treated in this way each year, and in addition there is an annual

if

Current Patents Gazette

DRUG PATENTS 2001

Current Trends in Pharmaceutical Discovery

Software, Resources and Websites

- Patinformatics Websites

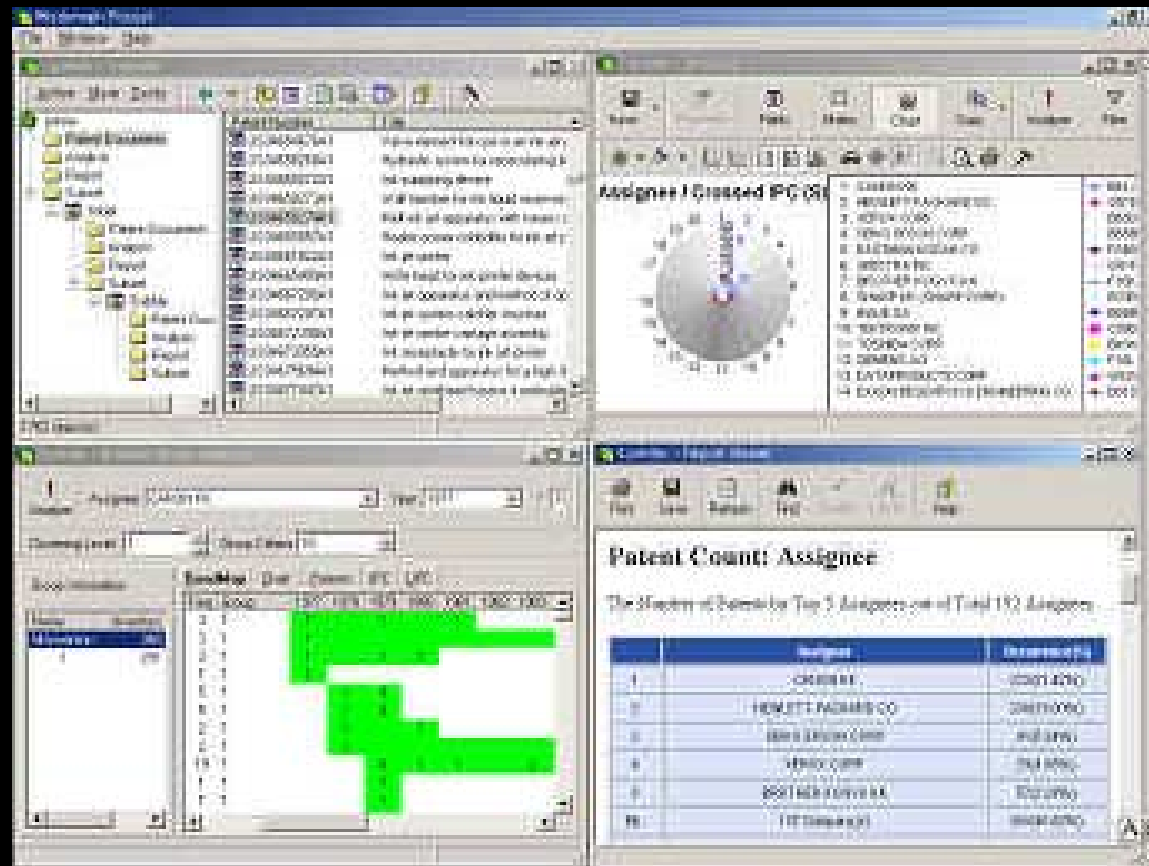
- www.wisdomain.com

- Search module
 - Citation Module
 - Analysis Module

- www.delphion.com

- Web site
 - PatLabII
 - Text Clustering
 - In-House

Wisdomain Analysis Module



Delphion PatLabII

Sample

Analysis Wizard - Selection of analysis type

Select a field to analyze.

- ☒ Assignee
- ☐ Inventor
- ☐ IPC, UPC
- ☐ Priority year, Issued year
- ☐ Priority country

Select assignee.

- ☐ All
- ☒ Select

* Selected field will be rows on a table and a chart.

Row by Assignee

Visualize industry trends or competitive developments for up to 20,000 records.

Choose 2D or 3D pie, bar or scatter charts in a single click.

	1997	Sum
1	1	10
2	1	0
3	0	5
4	1	5
5	1	4
6	0	3
7	0	3
8	0	3
9	0	3
10	1	3
11	1	3
12	1	3
13	0	0

Software, Resources and Websites

- Patinformatics Websites

- www.patentcitations.com
 - Dealing primarily in citation reports and custom US patent citation analysis
- www.patentvaluepredictor.com
 - Will predict value of a patent for \$100
- www.firsttofile.com
 - Offers soup-to-nuts system for managing patenting process
- TEMIS
 - Online Miner
 - www.temis-group.com/solutions.html

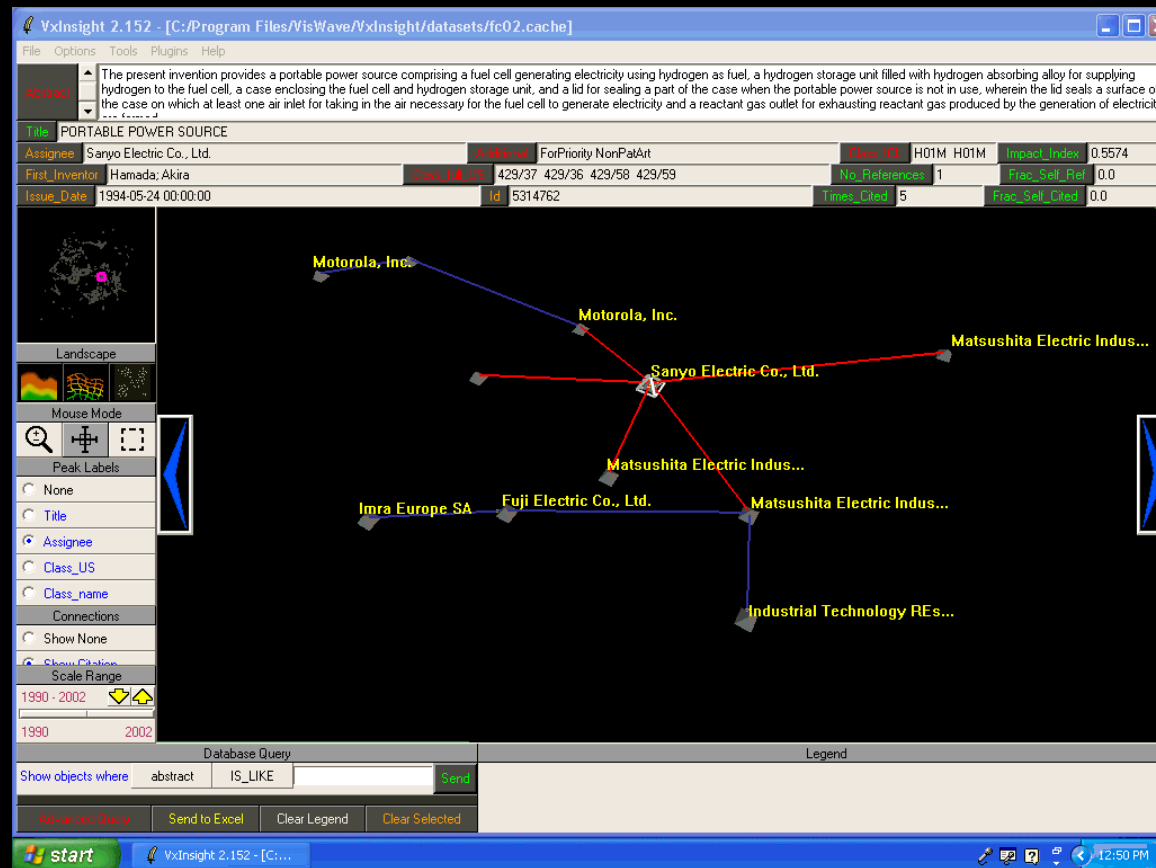
Software, Resources and Websites

- Patinformatics Sites
 - MicroPatent (www.micropatent.com)
 - Provides citation reports from CHI
 - Have developed a statistical analysis package to work with their databases

Software, Resources and Websites

- Special Announcement
 - The Metrics Group
 - Strategic alliance with VizWave
 - Produces VxInsight originally developed at Sandia National Labs
 - Offering free five month license for customers of Research Services Practice
 - Navigable patent maps based on multiple, interlinked citation trees
 - Licenses can be purchased at a discount

VxInsight/Metrics Group



VxInsight/Metrics Group

