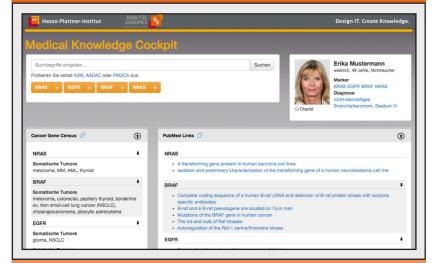
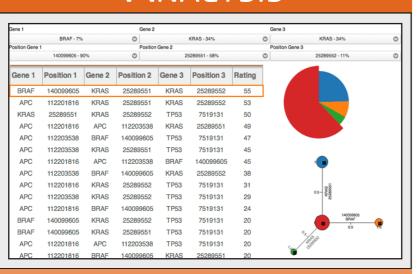
IN-MEMORY TECHNOLOGY ENABLING REAL-TIME ANALYSIS OF BIG MEDICAL DATA

Medical Knowledge Cockpit



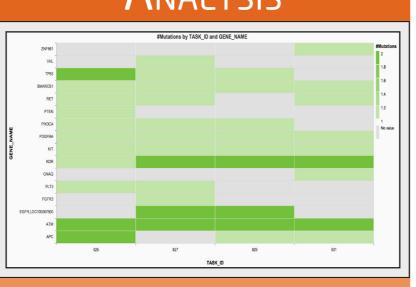
Combination of internationa research results to enable personalized treatment

PATIENT COHORT ANALYSIS



Exploration of genotypic and phenotypic correlations in patient cohorts

DRUG RESPONSE ANALYSIS



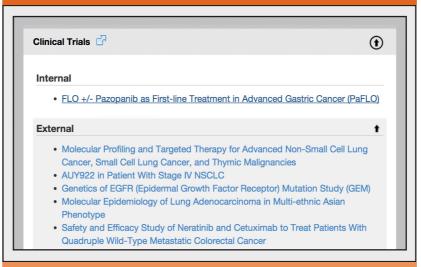
Prediction of drug response based on real-time analysis of similar tumors

IDENTIFICATION OF SCIENTIFIC KNOWLEDGE

Search		Q								
∨ Highlights		Molecular Patholog of Long Caroor, 2012 Molecular Targeted Therapy of Lung Cancer								
Concepts 15	Sanja Dacio									
Medical Term 11	p + 3	Page: 1	- I + Fu	Width :	**	0 5				
Year :	I	The traditional cher	notherapy agents used in ed lung cancer resulted in	Receptor Tyrosine K						
Organization (Med.)		only slight improve	ent of overall survival.	EGFR						
References		cules of cellular grow	get specific signaling mole- th pathways have emerged	The EGFR (HER-1/ErbB)) is a member of the					
✓ Recommendations		lung carcinoma (NSC	approach to non-small cell LC) in the last decade. The	ErbB family of tyrosine &	inase receptors (TK),					
Targeted Therapy for Gas Elizabeth C. Smyth, and David Cunningh in Current Treatment Options in Oncol		at various stages of	targeted anticancer agents in NSCLC stages of clinical development is (Table 10.1). Recently, clinical prac-	ErbB2, HER-3/ErbB3, and HER-4/ErbB4. It composed of extracellular (ligand binding), tra membrane and intracellular (tyrosine-kina	HER-4/ErbB4. It is ligand binding), trans-					
F Is there a role for vindesin			een updated to recommend	membrane and intracelly domain. Upon ligand bindi						
Heine H. Hansen, and Jens Benn Særen: in investigational New Drugs, 2001, V			ese agents as monotherapy specifically in patients with	or hetero-dimerization and						
A phase II trial of gemcita			s [1, 2]. It is important to	EGFR signals downstream RAS/RAF/MAPK pathwa						
Syed A. Ahmad, Philip J. Gold, Heinz-Jos in Cancer Chemotherapy and Pharma		ways regulate key pro-								
Mutual antagonism of beh		in the efficacy of targ	eted therapies. Most of the	cesses such as apoptosis ar	d proliferation.					
William T. McKinney, Fredric H. Klopf, an in Psychopharmacologia, 1987, Volu			effect on adenocarcinoma, with targeted therapies in	Therapies Targeting EG						
Ti Datte man of some and make			Frank Market Committee	Two treatment strategies	targeting EGER have					

Screening of latest scientific publications relevant for personalized treatment

IDENTIFICATION OF CLINICAL TRIALS



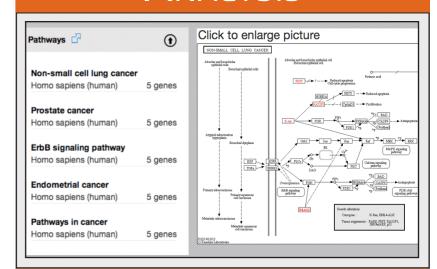
Automatic proposal of clinical trials based on individual patient anamnesis

ASSESSMENT OF MEDICAL SIDE EFFECTS

SPIRIN	ugs: SPIRIN Find Side Effects!										
Primary:		Secondar	y:	Concomi	Concomitant:		Interacting:				
# Reports	Side Effect	# Reports	Side Effect	# Reports	Side Effect	# Reports					
8	Urticaria	34	Gastrointestinal haemorrhage	290	Dyspnoea	12					
7	Gastrointestinal haemorrhage	19	Chest pain	253	Nausea	3	т				
6	Anaemia	19	Death	244	Fatigue	2	Α				
6	Anaphylactic reaction	17	Abdominal pain	196	Dizziness	2	Tox				
6	Angioedema	16	Anaemia	183	Pain	1					
5	Gastric haemorrhage	16	Renal failure acute	172	Fall	1					
5	Asthenia	16	Haemorrhage	170	Drug ineffective	1					
5	Dyspnoea	16	Drug hypersensitivity	161	Chest pain	1					
4	Dizziness	14	Fall	161	Diarrhoea	1					
4	Drug hypersensitivity	14	Nausea	153	Headache	1					
3	Pruritus	14	Melaena	146	Asthenia	1	F				
3	Off label use	14	Cardiac arrest	141	Malaise	1					
3	Gastritis	14	Haemoglobin decreased	139	Vomiting	1	Blo				
3	Melaena	14	Dyspnoea	127	Hypertension	1					
3	Throat irritation	13	Angioedema	125	Pain in extremity	1					
3	Rectal haemorrhage	12	Myocardial infarction	124	Anaemia	1					
3	Hypotension	12	Dizziness	118	Myocardial infarction	1	G				
3	Haemorrhage	11	Renal disorder	116	Oedema peripheral	1					
3	Haemoglobin decreased	11	Myalgia	112	Pneumonia	1	Cardioa				
2	Gastrointestinal ulcer	11	Epistaxis	106	Off label use	1	Blood pr				

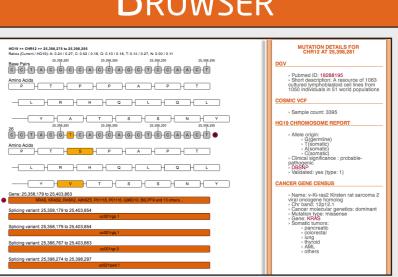
Identification of drug interactions to ensure pharmacotherapy safety

PATHWAY TOPOLOGY ANALYSIS



Graph topology analysis based on curated cellular pathways

Interactive Genome Browser



Interactive exploration of genomes at any site and any level of detail

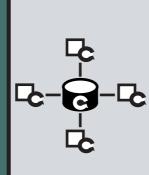
Prioritized Task Scheduling

Prioritized resource management across departments and individual users



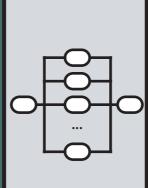
Combining Structured and Unstructured Data

Application of text analysis features to identify medical entities



Annotation and Updater Framework

Permanent monitoring and integration of international annotation databases

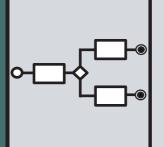


Parallel Execution Framework

Automatic allocation of resources enabling concurrent workflow execution

>> 135k Worldwide

Clinical Trials



User-Defined Analysis Workflows

Graphical modeling of analysis workflows integrating third-party tools



Resource Monitoring and Accounting

Fair and equal use of computational resources

>160k Medical Terms and Pharmaceutical Ingredients

>>4M Research Publications

>>130M Annotations from International Databases

>> 1.5k Cellular Pathways

DNA Sequences, e.g. 1,000 Genomes Project



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http://we.AnalyzeGenomes.com http://www.hpi.de/sapphire-now







