

# CORTELLIS™



## CORTELLIS INFORMATICS

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## THE CHALLENGE

Teams across your organization want fast and simple access to current information in order to make reliable, evidence-based decisions for their research. With everybody utilizing multiple sources of information, as well as a wide variety of applications and systems, efficiently accessing and using information to accelerate projects can be a challenge. Your teams need the right information at the right place and time in order to have a more productive R&D process.

## THE SOLUTION

Integrate key content and information into the tools and processes your teams use every day. Cortellis™ Informatics is a collection of Web Services Application Programming Interfaces (APIs) that “call” information from the market-leading Clarivate Analytics Life Sciences solutions and feed it into the systems that drive your business.

Give your users more advanced options for leveraging our intelligence within your internal applications. The APIs allow integration of Clarivate information with your proprietary content and public data sources into a single, comprehensive view so your researchers can find what they are looking for quickly and easily and see it in the context of their work.

Gain the flexibility to decide how and where our information is delivered within your company. Seamless, on-demand access to the most trusted life sciences intelligence on the market via desktop and mobile applications will enhance and accelerate your R&D.

## WHAT CAN YOU DO WITH CORTELLIS INFORMATICS?

The APIs retrieve information directly from Clarivate databases, enabling many opportunities to integrate information across your organization. This gives your users instant access to the same information across the board, saving time and reducing the risk of wasted or duplicated effort.

Embed high-quality Clarivate data into the systems that drive your business and:

- Build and present automatically updated dashboards
- Perform enhanced trending and other analyses
- Automatically pull content into Microsoft® PowerPoint® and Excel® spreadsheets
- Generate your own customized reports
- Run tailored alerts to notify you of key changes
- Integrate with enterprise solutions such as electronic lab notebooks (ELNs)
- Build custom search and analysis applications on your intranet
- Build mobile applications that leverage Clarivate content
- Build internal tools for your users to post and internally share comments related to the data from the API
- Combine Clarivate data with proprietary or third-party data

## THE APIs

### ANALYTICS

Aggregate data to build a competitive landscape for any indication, action, or company, and display all competing drugs complete with their development histories. You can then visualize your results in analytics tools such as TIBCO Spotfire® software.

- Import information into specific analysis tools, allowing precise manipulation of the data to display exactly what is required
- Build visual dashboards, instantly displaying at a glance a candidate's progression through trials
- Compare aggregated trial adverse events between drugs to evaluate their safety profile

Content:

- Drug Pipeline Events
- Patent Applications
- Trial Summaries
- Adverse Events reported in Trials



Analytics visualization

### BIOMARKERS

Find biomarkers and their uses across the full spectrum of drug discovery and development.

- Find validated biomarkers for clinical trials and cross-reference with the clinical API – to identify stratified populations
- Find suitable proof of concept and proof of mechanism biomarkers
- Inform your biomarker discovery programs by accessing the universe of known markers

Content:

- Biomarker Summaries
- Individual records for each distinct use, including validity and associated evidence



Biomarkers

## CLINICAL

Access detailed information for trials across all therapy areas. See relevant clinical trials by biomarker, patient segment, drug, company, or indication, and get breaking news on drug development from press releases and conferences.

- Stay up to date with the latest clinical trials information and get to the data quickly
- Be confident the results returned reveal the most up-to-date trial outcomes and adverse event information

### Content:

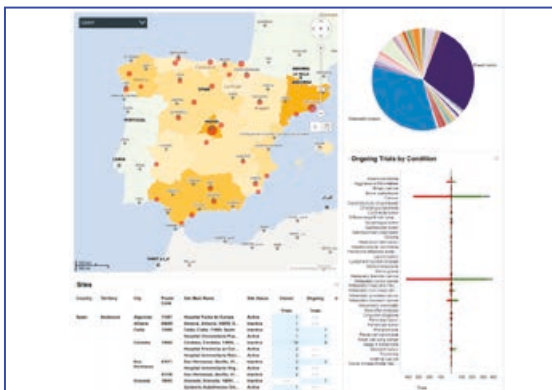
- Summaries of selected journal articles from 1964 to date
- Clinical trials content comprised from international registry sources
- Trial outcomes from journals, conferences, and press releases
- Pharma company press releases and information from major conferences

## COMPANY ANALYTICS

- Compare patent, pipeline, financial, and deal information across organizations
- Use Key Performance Indicators to contrast organizations
- Find similar companies by size, market cap, and drug development activity

### Content:

- Company, drug, and deal data from Investigational Drugs API
- Patents information from Patents API



Clinical trial sites



Company analytics

## DRUG DESIGN

Build QSAR analyses from experimental results reported in literature and patents. Compare IC50 and binding affinity for a range of compounds interacting with a target, and find ADME properties for compounds with a given substructure.

Content:

- Pharmacokinetics/Pharmacodynamics experimental results from literature
- Experimental pharmacology results from literature and patents
- Details of bioactive substances from early patenting to launch

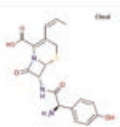
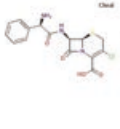
## DRUG-DRUG INTERACTIONS

Determine the effect of a drug or a metabolite on another drug's pharmacokinetic or pharmacodynamic profile with manually curated content.

- Understand which drug-drug interactions exist
- Understand a drug's pharmacokinetic exposure and pharmacodynamics interference
- Optimize the ADME profile and effectiveness of drug candidates
- Perform quantitative analysis of interactions between drugs and patients using appropriate models

Content:

- Records extracted or updated from
  - All FDA labels and EMA EPARs for US- and EU-approved drugs
  - The literature (articles from peer review journals, conferences, and meeting abstracts) since 2013
- For each record: at least one interaction study associated with a given reference, model, outcome, potential adverse event(s), and risk

Structure	Drug	Chemical Component	Reference	Structure ID	Type	Version	Units	Organism	Site	Title
	Celecoxib	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	Comparison of celecoxib and other NSAIDs for analgesic and anti-inflammatory effects
	Celecoxib	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	NSAID	Comparison of celecoxib and other NSAIDs for analgesic and anti-inflammatory effects

Drug design results

Interaction	Drug 1	Drug 2	Reference	Outcome	Risk
1	Celecoxib	Warfarin	NSAID	NSAID	NSAID
2	Celecoxib	Warfarin	NSAID	NSAID	NSAID
3	Celecoxib	Warfarin	NSAID	NSAID	NSAID

Comparing adverse interactions

## INVESTIGATIONAL DRUGS

Build a complete pipeline database with the ability to add your internal data and/or commentary.

- Combine everything known within the organization to ensure confidence that the landscape is as complete as possible
- Display competitive intelligence information (drugs, competitors, phases, technologies, indications, and actions) the way you want it in an easy-to-access format tailored to your specific needs

Content:

- Monographs for drugs and drug candidates
- Profiles of drug-development organizations
- Deals details
- Backgrounds for key diseases with profiles of key targets and supporting bibliographic references

Filtered by indication: Bone marrow disease | 1 month ago

	Target ID	Target Name	Target Description	Target Type	Target Status	Target Action	Target Location	Target Date
VEGF receptor agonist	1	VEGF	vascular endothelial growth factor	1	1	1	1	1
VEGF receptor inhibitor	2	VEGFR	vascular endothelial growth factor receptor	2	2	2	2	2
VEGFR inhibitor	3	VEGFR	vascular endothelial growth factor receptor	3	3	3	3	3
VEGFR inhibitor	4	VEGFR	vascular endothelial growth factor receptor	4	4	4	4	4
VEGFR inhibitor	5	VEGFR	vascular endothelial growth factor receptor	5	5	5	5	5
VEGFR inhibitor	6	VEGFR	vascular endothelial growth factor receptor	6	6	6	6	6
VEGFR inhibitor	7	VEGFR	vascular endothelial growth factor receptor	7	7	7	7	7
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VEGFR inhibitor	81	VEGFR	vascular endothelial growth factor receptor	81	81	81	81	81
VEGFR inhibitor	82	VEGFR	vascular endothelial growth factor receptor	82	82	82	82	82
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VEGFR inhibitor	98	VEGFR	vascular endothelial growth factor receptor	98	98	98	98	98
VEGFR inhibitor	99	VEGFR	vascular endothelial growth factor receptor	99	99	99	99	99
VEGFR inhibitor	100	VEGFR	vascular endothelial growth factor receptor	100	100	100	100	100

Investigational drugs CI matrix

## OMICS

Pull Clarivate systems biology content into your systems and link it with your own data.

- Search and browse key systems biology information on genes, proteins, molecular processes, interactions, networks, and more
- Export pathway maps as images or in XGMML format to explore and annotate in tools such as Cytoscape
- Combine the data with information from the target's API to identify druggable targets in your pathway of interest

Content:

- Interactions with associated directionality, trust, and effect
- Human, mouse, and rat gene, RNA, and protein information
- Original canonical pathway maps

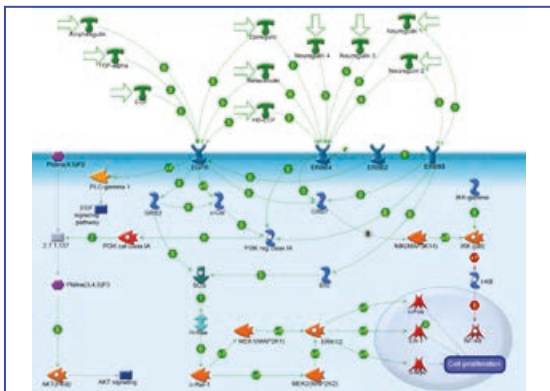
## OMICS ANALYTICS

Process omics experimental results directly from within your own applications.

- Match identifiers from other ontologies, such as Entrez or Affymetrix to Omics API objects for analysis
- Perform enrichment analyses of your data by pathways, processes, biomarkers, and toxicity
- Apply any combination of nine network-building algorithms to your data

Content:

- Pathways, interactions, networks, and ontologies from the Omics API



Pathway map



Omics analytics





## ONTOLOGIES

Search and browse Cortellis ontologies. Map drug names, diseases, and actions.

- Deploy proven ontologies, saving time and resources in creating your own ontologies
- Access a “dictionary” of Clarivate names and synonyms, making it easier and faster to get to the information needed
- Auto-index free text to Cortellis ontologies to provide context from other Cortellis APIs

Content:

- Controlled vocabulary terms owned and maintained by Clarivate
  - Actions, Indications, Technologies, Companies, Conditions, Target Classification, Tissues, Processes, Organisms, Fluids, Localizations, Cell Lines, Molecular Functions, Patient Segment, Trial Endpoints, Development Status, Country, Exclusion Criteria, Inclusion Criteria, and Literature
- Drug synonyms and mappings
- Mappings of Clarivate disease identifiers to standard ontologies (MeSH, ICD9/10, MedDRA, and Orphanet) and target identifiers to SwissProt

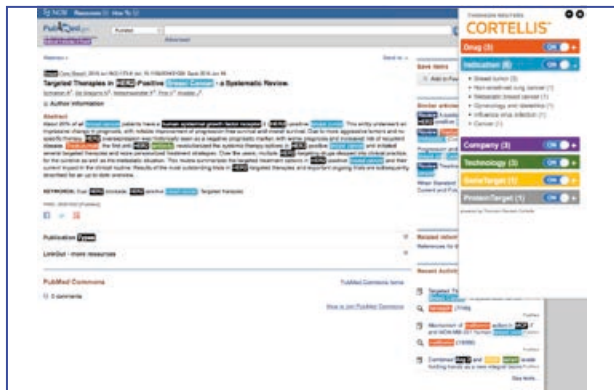
## PATENTS

View the competitive patent landscape around a particular drug, disease, inventor, or mechanism of action, or provide tailored patent alerting to workgroups.

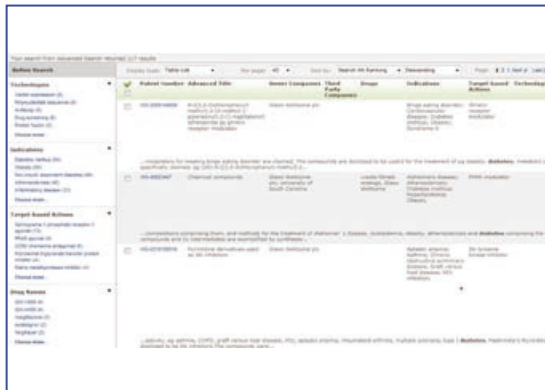
- Find out the latest patent news for a given disease to guide research goals
- Find out which companies are active in a particular therapeutic area or technology

Content:

- Patent families
- Indexing to controlled vocabularies
- Classification by patent type and therapy area
- Manually curated titles and fielded abstracts, summarizing the invention
- Selected chemical structures
- Bibliographic information, including IPCs, filing dates, and inventors



Ontologies indexing



Patent results

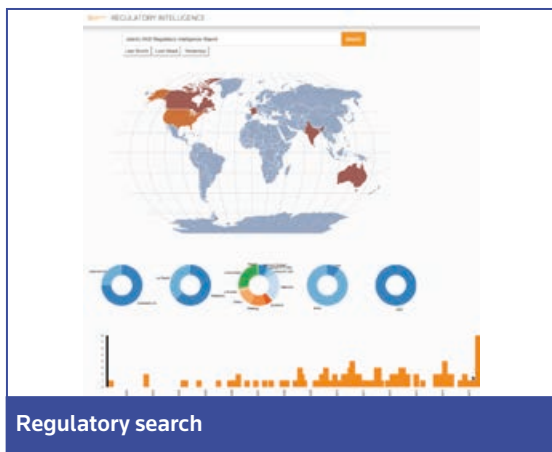
## REGULATORY

Access regulatory reference documents, view summaries of procedures and reports, or build comparisons of regulations and drug approval documents from across the world.

- Fetch the most up-to-date regulatory documents and guidelines into your internal system
- Build a timeline of the development of a particular regulation
- Show a map view of relevant regulatory information

Content:

- Current and historical regulatory reference documents
  - Legislation, guidelines, and approval packages
- Regulatory summaries, including submission routes and local regulatory practice
- Regulatory intelligence reports for tracking changes, and preparing for inspections
- Global regulatory comparisons of requirements and procedures across regulatory authorities



Regulatory search

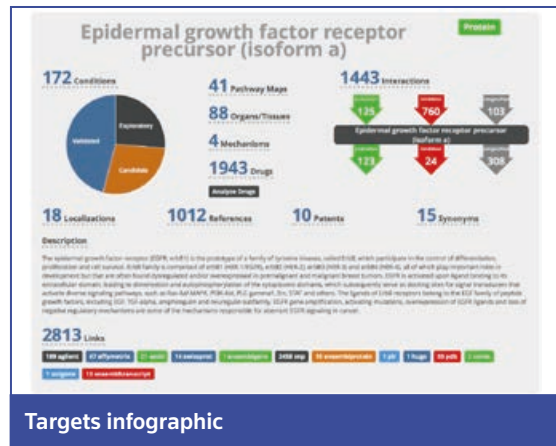
## TARGETS

Build a “Targetpedia” with all information about a target and the drugs active on it.

- Combine proprietary data to build a comprehensive resource giving more confidence that everything known in the organization is displayed
- Stay up to date with all the latest drug targets’ information to facilitate better and faster business-critical decisions

Content:

- Information on targets from patents, journals, meetings, trial registries, websites, regulatory bodies, and public databanks
- Details, including chemical structures of compounds known to interact with the target
- Associated drugs with phase of development for each condition
- Associated variant and biomarker information



Targets infographic

# CORTELLIS™

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