

A close-up, artistic photograph of a glass pipette tip with a single drop of liquid hanging from it, set against a blurred background of laboratory equipment and colorful lights (green, blue, yellow).

GVK BIOSCIENCES Informatics

Executing to a long-term strategy

Vision

Be a **global leader** in **life-sciences services**

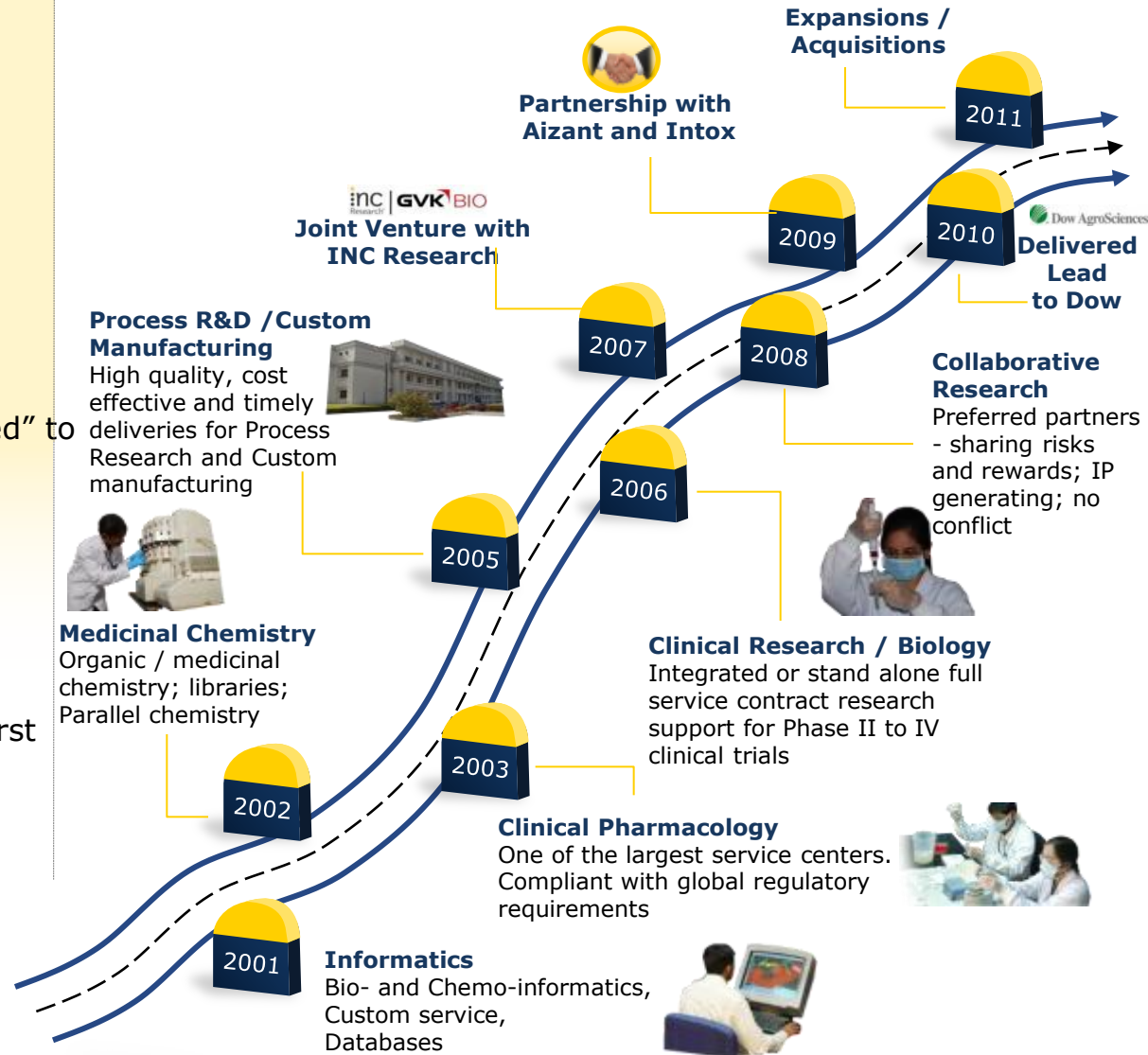
Mission

Deliver **value-added** scientific services with **speed and quality**

Values

- **Customer Focus** : Change “expected” to “exceptional”
- **Integrity**: Integrity is Integral
- **Respect**: Give to Get
- **Commit To Excel**: In every act and deed
- **Leadership & Teamwork**: Team first

Promoted by GVK Group and Mr. D S Brar (ex CEO and MD Ranbaxy)



Services

- Computational Chemistry
- Virtual Screening, Hit/Lead Optimization
- Bio & Cheminformatics Services
- KPO - Patent Search & Curation Services
- BioIT Applications Development & Database Development & Management
- Clinical Pharmacology Data Analysis
- PK/PD Modeling (In progress)

Products

❑ Standalone

- Medicinal Chemistry Database
- Target Inhibitor Databases
- Natural Product Database
- Drug & Clinical Candidate Databases
- Mechanism Based Toxicity Database
- Clinical Trial Outcome Database

❑ Online



The largest manually curated SAR database with 5.7 million compounds screened from 1.9 million patents and 325,000 published articles.



Most comprehensive collection of clinical Biomarkers in the world, Developed with a large Pharma and USFDA

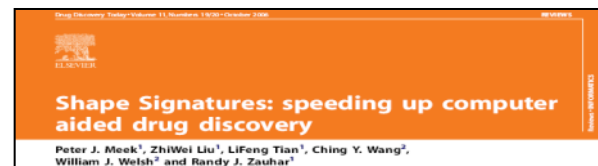
Key Differentiators

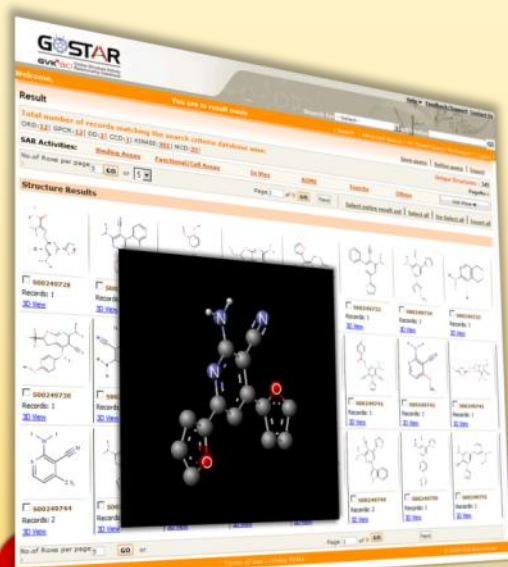
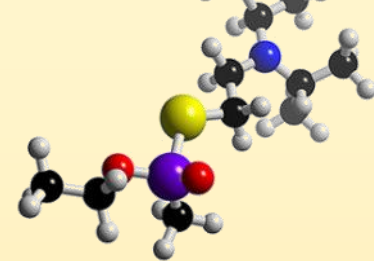
- More than 25 publications on our various databases
- Manual curation of data
- Standard ontologies
- Regular updates
- Flexibility of data format
- Need base support with our service portfolio
- Data coverage space: Discovery, development & Clinical



Analysis of in vitro bioactivity data extracted from drug discovery literature and patents: Ranking 1654 human protein targets by assayed compounds and molecular scaffolds

Christopher Southan, Kiran Boppana, Sarma A.R.P. Jagarlapudi & Sorel Muresan





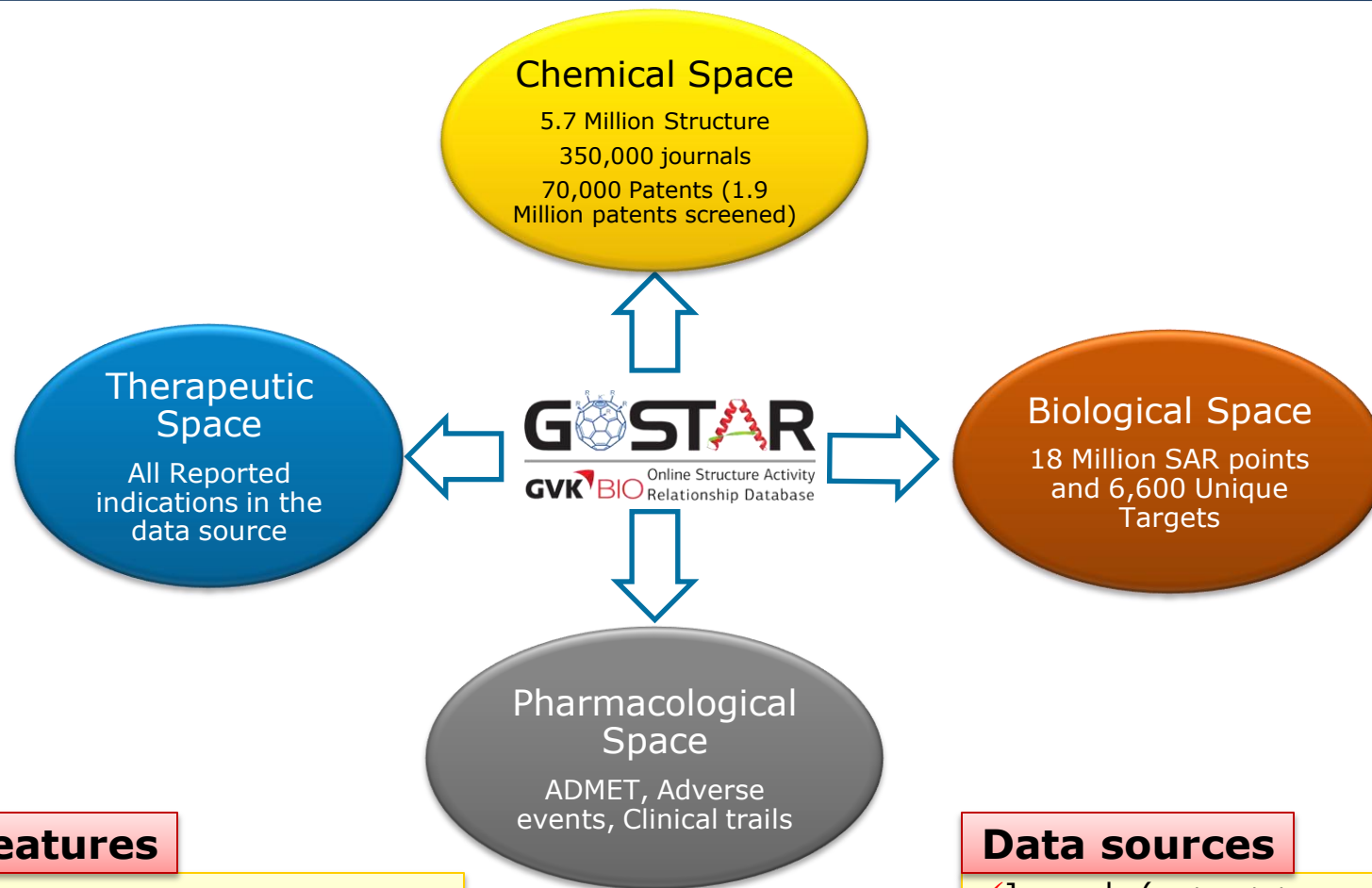
GOSTAR

GVK^{BIO} Online Structure Activity Relationship Database

A Web Based Application with over

- ✓ 5.7 million small molecules
- ✓ 18 million SAR points
- ✓ 6,516 unique targets

www.gostardb.com



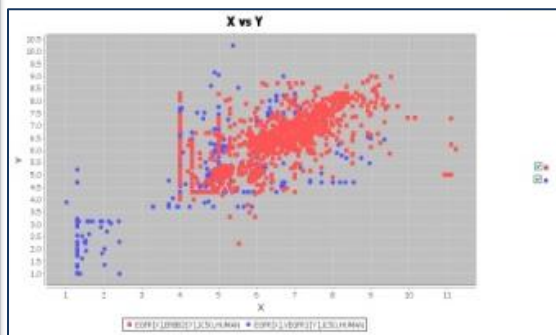
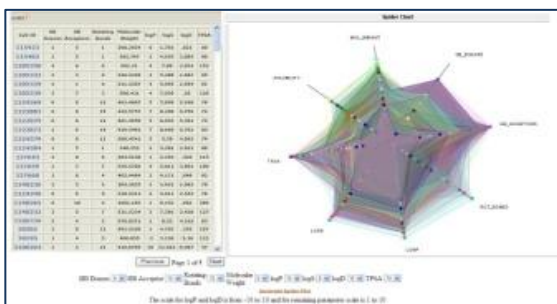
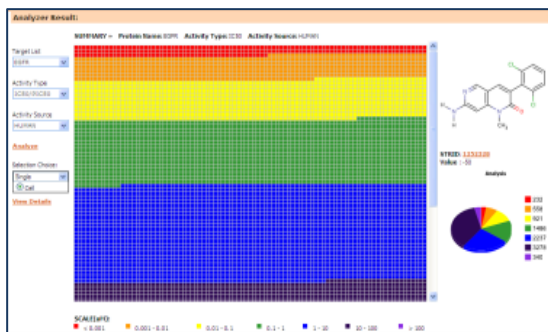
Key Features

- ✓ Secured Web Applications
- ✓ In-Built Analysis Tools
- ✓ Export multiple formats
- ✓ Manual Extraction
- ✓ Standard ontology & Vocabulary
- ✓ Monthly Updates

Data sources

- ✓ Journals (Medicinal chemistry, JPET, ASPET)
- ✓ Patents (Top 10 Target families-WO,US,GB,JP)
- ✓ Product Leaflets
- ✓ EPAR & EMA Documents
- ✓ Company Websites
- ✓ Drug Reports and Reviews
- ✓ Conferences

Analzers in GOSTAR can be used to identify the data for Target Validation, Target Assessment, Lead optimization Virtual screening and scaffold hopping



Analysis of Target Binding Data in GOSTAR

- **Activity Analyzer**--Systematic sorting of molecules based on activity value, target, source and Activity type.
- **Heat Map**--Helps in understanding the off target activity within a result set.
- **MCSS**—Understand the chemical space along with biological activity
- **Property Space** – Data based on Lipinski Values, Solubility (Experimental & Calculated),TPSA values.
- **Scatter Plot** - Understand the huge results with multiple combinations like Targets, Source, Activity Type and Physicochemical properties.
- **LE vs. LLE**-- visualize the relationship between Ligand efficiency and Ligand Lipophilic efficiency
- **Molecular Pairs: Structure similarity Vs Activity**-- Identifying the compounds having similar activity with similar kind of chemical space within a certain result set.
- **Core Group Analysis** – For a given Target (source & activity), analyses the unique molecules and identifies the core groups based on Score.

Database is a repository of exploratory, preclinical and clinically-evaluated biomarkers.

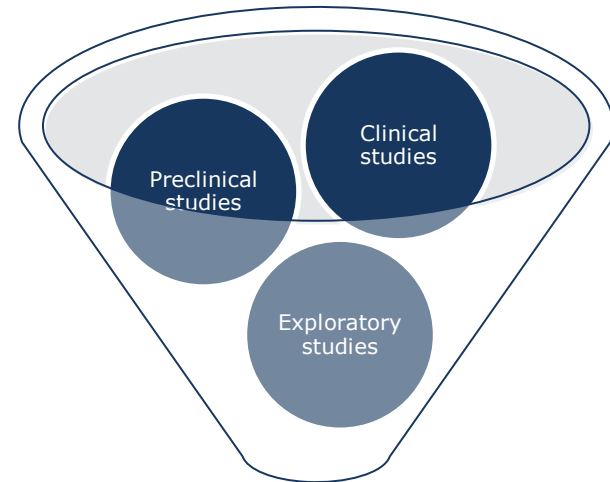
Exploratory – Evidence from in-house experiments or literature. No clinical trial studies.

Preclinical – Evidence from preclinical models. Not yet studied in humans.

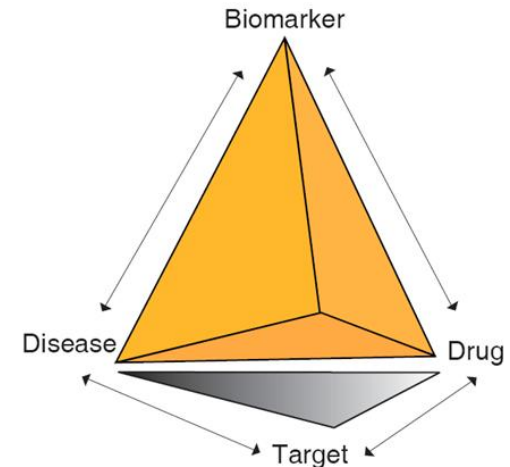
Clinical – Evidence from clinical trial studies.

A proprietary Tetrahedron model is adopted in the framework of the database to simplify the process of biomarker data analysis.

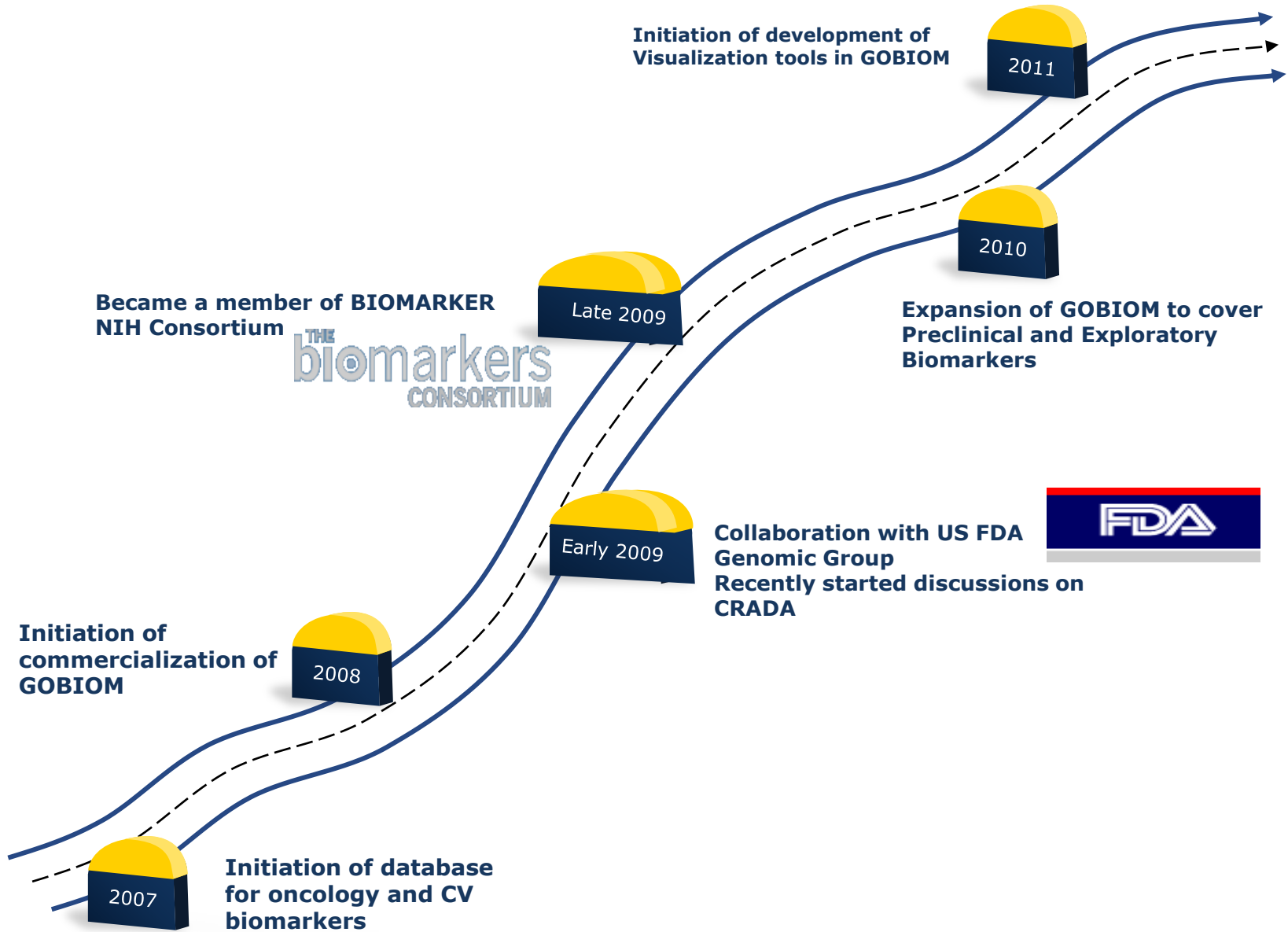
www.gobiomdb.com

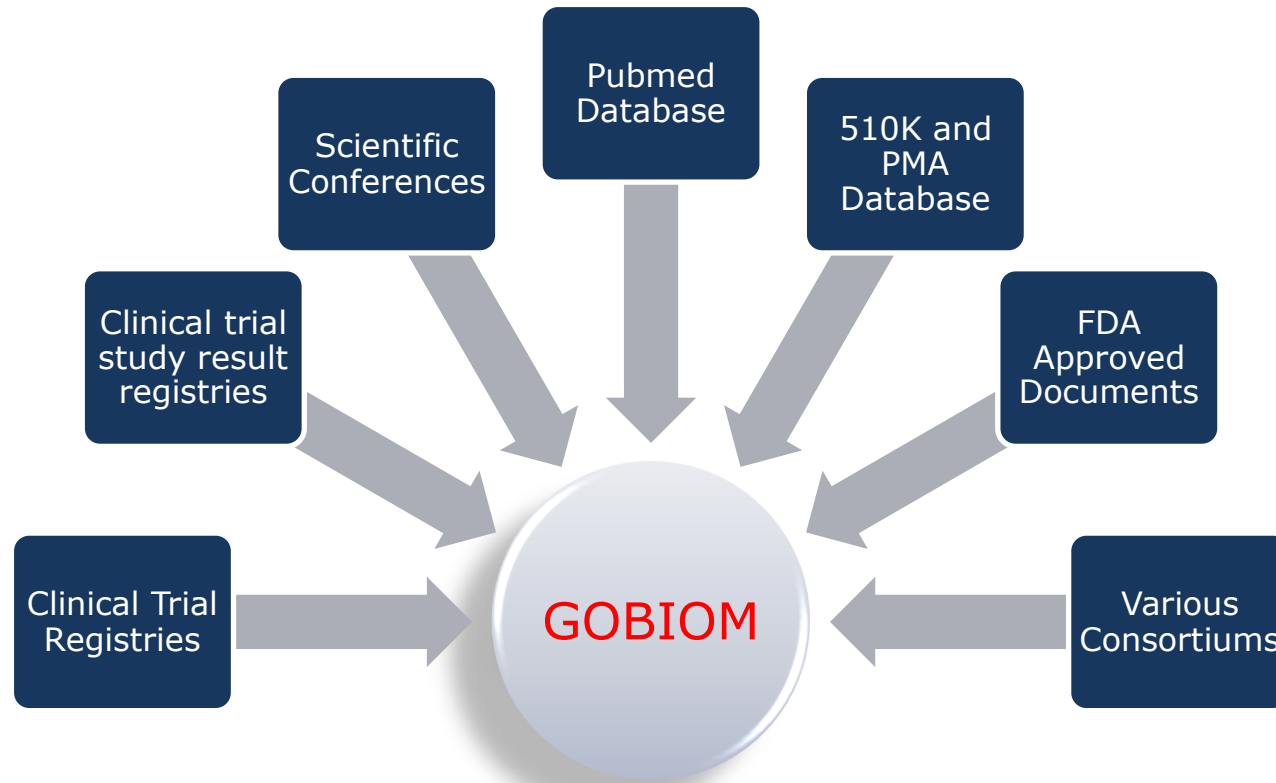


GOBIOM
GVK BIO Online Biomarker Database



GOBIOM Database Development Path





- ✓ Manual curation and Periodic updation of the data
- ✓ Standard Nomenclature; ICD-10, NCBI, MedDRA, CTCAE etc
- ✓ GVK BIO proprietary ontology for various sections where standards are not available
- ✓ Relational database with intuitive search engine
- ✓ Export options to Excel, PDF and XML

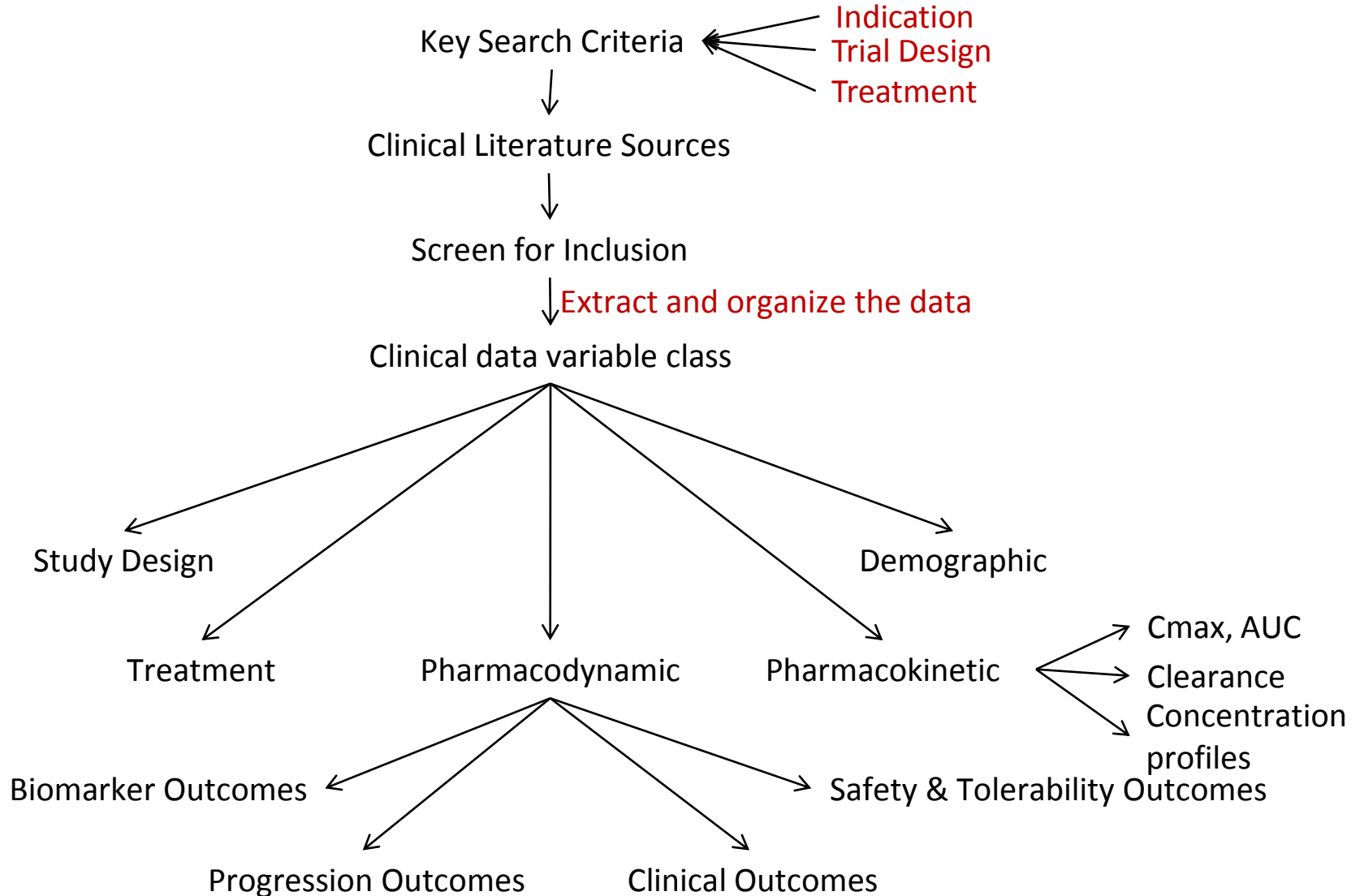
Clinical Trial Outcome Databases

Value Propositions

- The ability to quickly and securely access, share, explore, and analyze comprehensive, integrated, up-to-date clinical efficacy and safety data is central to effective drug development

- Potential applications
 - Competitive intelligence
 - Product positioning
 - Comparative effectiveness analysis
 - Side effect profiling
 - Quantitative decision making:
 - Portfolio prioritization
 - In-licensing/out-licensing
 - Trial design/dose selection
 - Industry analysis/company valuations

Conceptual Data Model



Contact Details

THANK YOU

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