Leveraging your research data using TenWise's KMAP & KMINE

TenWise offers text mining solutions by providing access to its KMAP platform.

Our **KMAP platform** captures validated scientific knowledge about human genes, micro-organisms, metabolites, pathways, phenotypes, diseases, drug compounds and research workflows, in over 200 million biological relations.

"TenWise use intelligent, innovative (bio)informatics techniques, mining data to uncover hidden relationships and networks in disease areas, their expertise providing new insight in pharma research, presented in intuitive, comprehensive reports"
BioAxis Research, customer for research in role of Brown fat in metabolic disorders and obesity

"We use KMAP for several applications both internally and externally. For example, to collect information regarding selected proteins to support our customers or for prioritization of new protein targets."
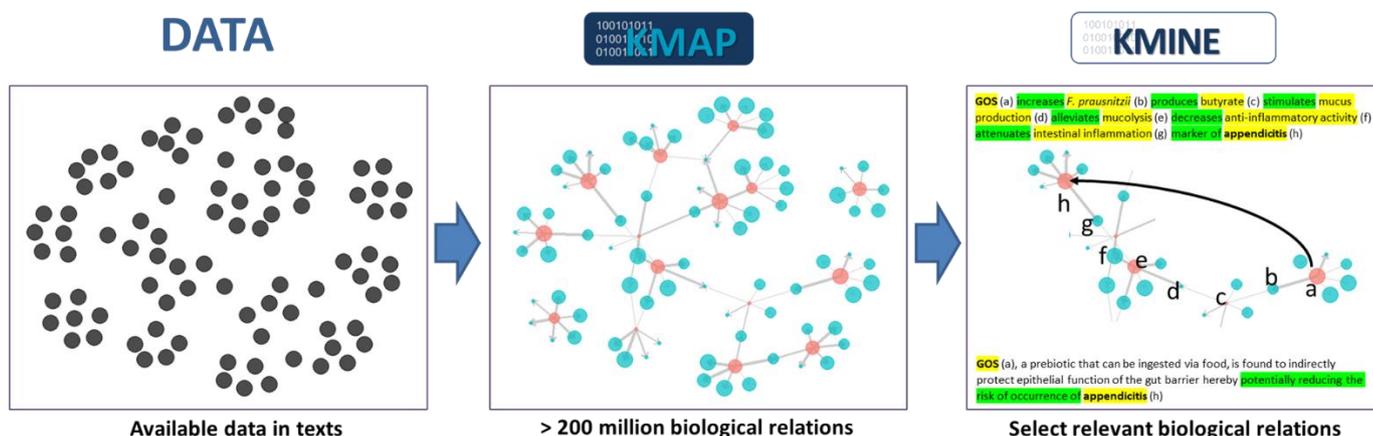**Olink Proteomics, CRO in the proteomics field**

DATA

Available data in texts

KMAP

> 200 million biological relations

KMINE

GOS (a) increases *F. prausnitzii* (b) produces butyrate (c) stimulates mucus production (d) alleviates mucolysis (e) decreases anti-inflammatory activity (f) attenuates intestinal inflammation (g) marker of appendicitis (h)

GOS (a), a prebiotic that can be ingested via food, is found to indirectly protect epithelial function of the gut barrier hereby potentially reducing the risk of occurrence of appendicitis (h)

Select relevant biological relations

Figure 1: KMAP captures scientific knowledge in over 200 million biological relations and KMINE uncovers hidden relations
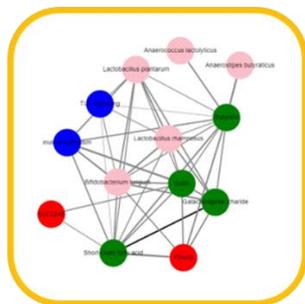
Our **KMINE products** offer access to the KMAP platform. These products are designed specifically for research teams and data engineers to assist in: √ **discovery** √ **drug repurposing** √ **literature scoping** √ **clinical validation**.

KMINE REST-API
Direct access to KMAP
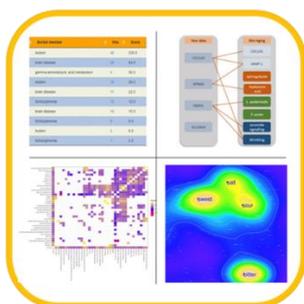
KMINE LITERATURE EXPLORER
Web interface for interactive discovery

KMINE LITERATURE REPORTS
Dedicated literature reports

KMINE SCOPING REVIEW
Scoping reviews

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Drug repurposing: Use of KMINE in support of selective cancer gene targeting

We used:

Peer-reviewed publications that focus on drug repurposing look at finding synergies between existing drugs in targeting difficult-to-target cancer genes. In this use case we generated a **KMINE Literature Report** that lists cancer genes that are related to different types of cancers that we have in our Disease Ontology. Also, we looked at the most important cancer genes found and searched for drug compounds described to date that have described relations. This yielded hundreds of diseases (A)-drug (B) and drug (B)-gene (C) relations. We demonstrated how this **ABC principle** can be used to find other and new cancer diseases related to existing drugs by means of looking at similarities in genes.

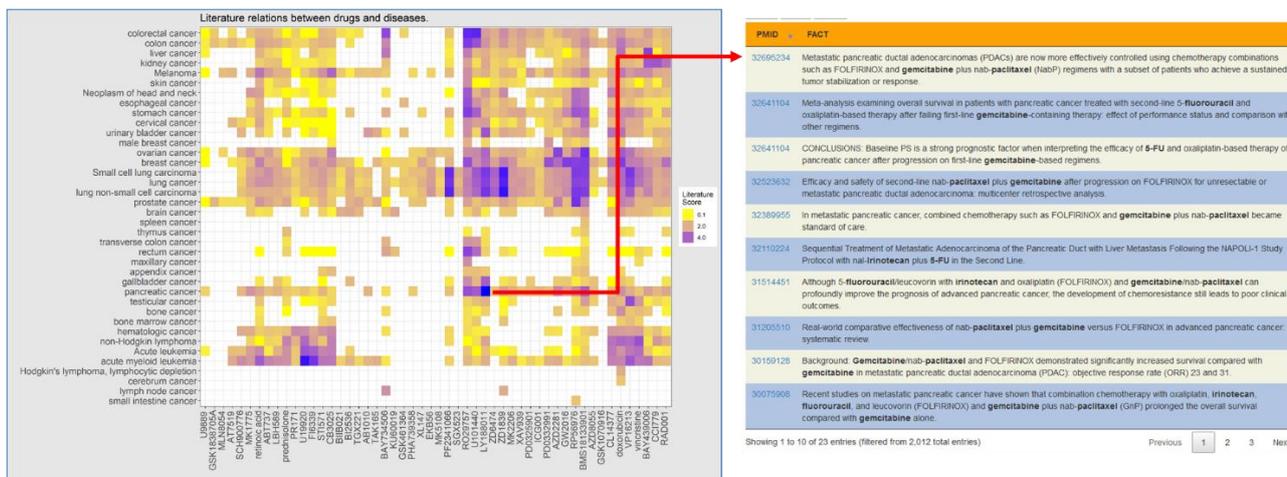Literature Report: cancer gene targeting with existing drugs

Figure 2: first step in drug repurposing: linking diseases (A) and drugs (B) with sentence generation describing mode of actions.

Conclusions:
KMINE enables researchers to find hidden relations via the ABC principle. **KMINE Literature Reports** allow to interactively search in tables, networks and heatmaps to easily and quicky **extract abstracts and sentences** of relevance describing **putative relations** between concepts.

Want to know how to access KMAP? Call us or request a demonstration or quote:

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