geneXplain

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TRANSFAC: Your gateway to precision gene regulation

TRANSFAC isn't just another database—it's the original, the one everyone else imitates.
When precision, clarity, and actionable insights from genomic data matter, TRANSFAC is your best ally.

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Motifs & TF-Binding Sites:
Precision Defined

10,000+ Curated PWMs

Access the largest, highest-quality library of eukaryotic transcription factor motifs

Instant Variant Impact

Quickly see how genomic variants impact transcription factor binding, streamlining mutation interpretation

AI-Enhanced Predictions

Accurately predict TF interactions, saving time and increasing confidence in your results

Key outcomes:

Eliminate guesswork in genomic interpretation, dramatically accelerating research timelines

Unique features:

Unlike simplified motif databases, TRANSFAC's PWMs are extensively validated, offering far superior reliability

Promoters & Enhancers: Explore
Deeper, Find More

Experimentally Validated Data

Leverage the largest collection of experimentally proven TF-gene interactions for robust insights

Discover Hidden Regulators

Detect complex regulatory interactions others overlook, including synergistic composite elements

Rapid Target Identification

Effortlessly pinpoint precise targets tailored to specific tissues or conditions

Key outcomes:

Quickly transition from raw data to validated hypotheses, improving research efficiency and accuracy

Unique features:

While others rely on computational predictions alone, TRANSFAC provides unmatched experimental validation

Pathways & Master Regulators:
Connect the Biological Dots

Visual Network Clarity

Simplify complex data using over 1.2 million expert-validated molecular interactions

Custom Network Creation

Build personalized pathways effortlessly, tailored specifically to your research questions

Uncover Master Regulators

Identify critical upstream drivers missed by traditional approaches, highlighting impactful therapeutic targets

Key outcomes:

Move beyond surface-level pathway analysis to deeply understand disease mechanisms

Unique features:

TRANSFAC integrates uniquely curated pathway data, far exceeding standard pathway tools

Multi-Omics: Integration Without Complexity

Automated Analysis Pipeline

Easily integrate genomics, transcriptomics, proteomics, epigenomics, and metabolomics data

Advanced Upstream Analysis

Precisely identify master transcriptional regulators from complex multi-omics datasets

Key outcomes:

Streamline multi-omics analyses, drastically reducing time from data to actionable insights

Unique features:

Unlike fragmented analysis tools, TRANSFAC provides comprehensive, fully automated multi-omics integration

Biomarkers & Drug Discovery:
Faster Insights, Better Outcomes

Extensive Biomarker Database

Over 140,000 curated gene-disease and drug-target associations

Disease Mechanism Reconstruction

Effortlessly reconstruct molecular drivers behind diseases, enhancing therapeutic strategies

Key outcomes:

Rapidly discover biomarkers and drug targets, greatly improving drug development timelines

Unique features:

TRANSFAC's biomarker data depth and disease mechanism insights surpass competitors significantly

Precision Medicine: Truly
Personalized, Highly Effective

Personalized Therapeutic Insights

Quickly identify patient-specific drug targets from individual multi-omics profiles

Drug Repurposing Excellence

Efficiently explore off-label and novel drug combinations for personalized care

Key outcomes:

Achieve truly personalized treatment strategies, greatly improving patient outcomes

Unique features:

TRANSFAC uniquely integrates omics data to deliver actionable personalized therapeutic insights

Powerful, User-Friendly
Workflows

200+ Ready-to-Use Pipelines

Effortlessly execute complex analyses without coding

Visual Pipeline Customization

Intuitively tailor your analyses with visual programming

Flexible APIs & Visualization Tools

Seamlessly manage workflows and visualize results intuitively

Key outcomes:

Remove bioinformatics bottlenecks, empowering biologists to directly drive data analysis

Unique features:

TRANSFAC's user-friendly workflows eliminate the steep learning curves typical of competitor platforms

Why Choose TRANSFAC? Simply Unmatched.

35 Years of Expertise

Meticulous curation ensures unparalleled accuracy and trustworthiness

Largest Validated Dataset

The gold standard for experimentally proven TF binding sites

Robust AI Integration

Advanced algorithms deliver exceptionally precise regulatory predictions

Comprehensive Systems Biology Approach

Seamlessly integrates transcription factors, pathways, and disease mechanisms

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