

Resource Summary Report

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tranSMART

RRID:SCR_005586

Type: Tool

Proper Citation

tranSMART (RRID:SCR_005586)

Resource Information

URL: <https://github.com/transmart>

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Description: tranSMART is a knowledge management platform that enables scientists to develop and refine research hypotheses by investigating correlations between genetic and phenotypic data, and assessing their analytical results in the context of published literature and other work. tranSMART is licensed through GPL 3. The integration, normalization, and alignment of data in tranSMART permits users to explore data very efficiently to formulate new research strategies. Some of tranSMART's specific applications include: * Revalidating previous hypotheses * Testing and refining novel hypotheses * Conducting cross-study meta-analysis * Searching across multiple data sources to find associations of concepts, such as a gene's involvement in biological processes or experimental results * Comparing biological processes and pathways among multiple data sets from related diseases or even across multiple therapeutic areas

Data Repository The tranSMART Data Repository combines a data warehouse with access to federated sources of open and commercial databases. tranSMART accommodates: * Phenotypic data, such as demographics, clinical observations, clinical trial outcomes, and adverse events * High content biomarker data, such as gene expression, genotyping, pharmacokinetic and pharmacodynamics markers, metabolomics data, and proteomics data * Unstructured text-data, such as published journal articles, conference abstracts and proceedings, and internal studies and white papers * Reference data from sources such as MeSH, UMLS, Entrez, GeneGo, Ingenuity, etc. * Metadata providing context about datasets, allowing users to assess the relevance of results delivered by tranSMART

Data in tranSMART is aligned to allow identification and analysis of associations between phenotypic and biomarker data, and it is normalized to conform with CDISC and other standards to facilitate search and analysis across different data sources. tranSMART also enables investigators to search published literature and other text sources to evaluate their analysis in the context of the broader universe of reported research. External data can also be integrated into the tranSMART data repository, either from open data projects like GEO, EBI Array Express, GCOD, or GO, or from commercially available data sources. Making data accessible in tranSMART enables organizations to leverage investments in

manual curation, development costs of automated ETL tools, or commercial subscription fees across multiple research groups. Dataset Explorer tranSMART's Dataset Explorer provides flexible, powerful search and analysis capabilities. The core of the Dataset Explorer integrates and extends the open source i2b2 application, Lucene text indexing, and GenePattern analytical tools. Connections to other open source and commercial analytical tools such as Galaxy, Integrative Genomics Viewer, Plink, Pathway Studio, GeneGo, Spotfire, R, and SAS can be established to expand tranSMART's capabilities. tranSMART's design allows organizations flexibility in selecting analytical tools accessible through the Dataset Explorer, and provides file export capabilities to enable researchers to use tools not accessible in the tranSMART portal.

Abbreviations: tranSMART

Resource Type: software resource

Keywords: source code, genetic, phenotype, gene, data storage repository, data analysis service

Resource Name: tranSMART

Resource ID: SCR_005586

Alternate IDs: nlx_146211

Old URLs: <http://www.transmartproject.org/>

Record Creation Time: 20220129T080231+0000

Record Last Update: 20260725T190606+0000

Ratings and Alerts

No rating or validation information has been found for tranSMART.

No alerts have been found for tranSMART.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 13 mentions in open access literature.

Listed below are recent publications. The full list is available at [SPARC SAWG](#) .

Lawson-Tovey S, et al. (2023) The successes and challenges of harmonising juvenile idiopathic arthritis (JIA) datasets to create a large-scale JIA data resource. Pediatric rheumatology online journal, 21(1), 70.

Badi YE, et al. (2022) Mapping atopic dermatitis and anti-IL-22 response signatures to type 2-low severe neutrophilic asthma. *The Journal of allergy and clinical immunology*, 149(1), 89.

Westwood S, et al. (2020) Validation of Plasma Proteomic Biomarkers Relating to Brain Amyloid Burden in the EMIF-Alzheimer's Disease Multimodal Biomarker Discovery Cohort. *Journal of Alzheimer's disease : JAD*, 74(1), 213.

Spengler H, et al. (2020) Enabling Agile Clinical and Translational Data Warehousing: Platform Development and Evaluation. *JMIR medical informatics*, 8(7), e15918.

Bachelet D, et al. (2019) Risk stratification integrating genetic data for factor VIII inhibitor development in patients with severe hemophilia A. *PloS one*, 14(6), e0218258.

Gallacher J, et al. (2019) Challenges for Optimizing Real-World Evidence in Alzheimer's Disease: The ROADMAP Project. *Journal of Alzheimer's disease : JAD*, 67(2), 495.

Bos I, et al. (2018) The EMIF-AD Multimodal Biomarker Discovery study: design, methods and cohort characteristics. *Alzheimer's research & therapy*, 10(1), 64.

Prasser F, et al. (2018) Data Integration for Future Medicine (DIFUTURE). *Methods of information in medicine*, 57(S 01), e57.

Herzinger S, et al. (2017) SmartR: an open-source platform for interactive visual analytics for translational research data. *Bioinformatics (Oxford, England)*, 33(14), 2229.

Zhang C, et al. (2017) Systematically linking tranSMART, Galaxy and EGA for reusing human translational research data. *F1000Research*, 6.

Rance B, et al. (2016) Integrating Heterogeneous Biomedical Data for Cancer Research: the CARPEM infrastructure. *Applied clinical informatics*, 7(2), 260.

Bachelet D, et al. (2016) Occurrence of Anti-Drug Antibodies against Interferon-Beta and Natalizumab in Multiple Sclerosis: A Collaborative Cohort Analysis. *PloS one*, 11(11), e0162752.

Scheufele E, et al. (2014) tranSMART: An Open Source Knowledge Management and High Content Data Analytics Platform. *AMIA Joint Summits on Translational Science proceedings. AMIA Joint Summits on Translational Science*, 2014, 96.