

Abstract Sifter: A literature informatics tool for computational toxicology

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The biomedical literature contains an abundance of information about the activity of chemicals in biological systems. The goal of literature informatics research at the EPA's National Center for Computational Toxicology is to use the literature more effectively in computational toxicology. To this end, we have developed a novel approach to article retrieval in our Abstract Sifter application. The Abstract Sifter is a document retrieval tool that integrates the richness of PubMed and other bibliographic sources with the powerful data-handling capabilities of Microsoft Excel. Results from searches are imported directly into an Excel sheet where the end-user can then use a novel "sifting" methodology for quick, agile relevance ranking of articles. The tool also enables article triage capabilities through easy tagging and noting functionality. Triage citations can be exported to external software such as reference management tools. The Abstract Sifter can also provide a high-level view of a corpus of literature for a defined set of entities such as chemicals. This "landscape" view helps researchers assess the volume of literature in any given subject area to help with project scoping and chemical ranking and prioritization. Queries developed from the OECD Adverse Outcome Pathway (AOP) project connect key events in AOPs to the literature for chemicals on the Landscape sheet, offering evidence for inferring and investigating a chemical's mechanisms of action. The Excel format of the tool provides ease of use and facilitates collaboration. *This abstract does not necessarily represent U.S. EPA policy.*