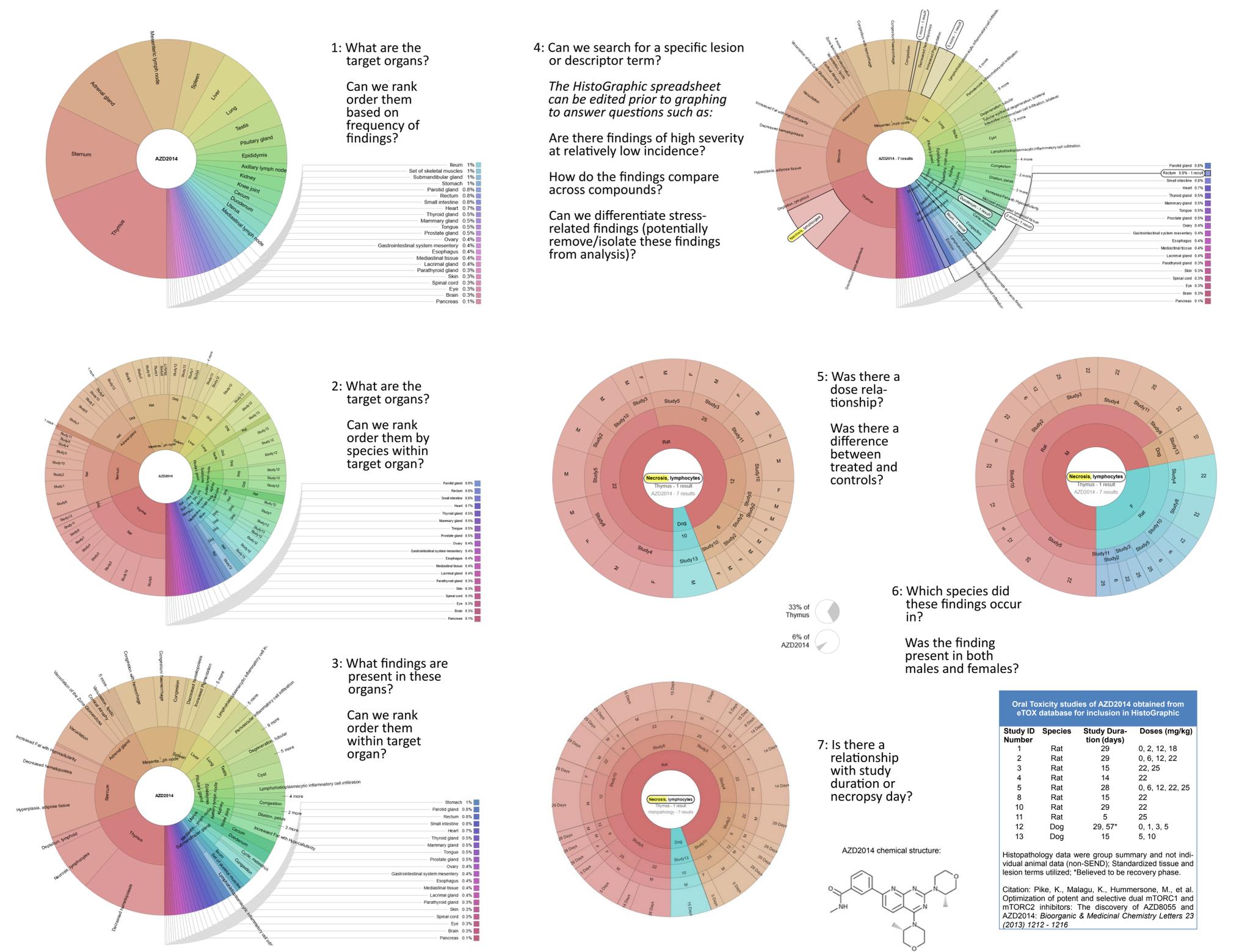


Evaluation of a Novel Graphical Display Tool for Visualizing & Analyzing Histopathology Data from Multiple Toxicology Studies

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The ability to aggregate and analyze histopathology data from multiple toxicology studies provides the opportunity to identify trends in target organ toxicities and lesions of concern, and to readily compare results across studies. This functionality is provided by **HistoGraphic**, a novel graphical display tool which utilizes a 'sunburst' format based on a hierarchical concentric ring structure. As proof-of-concept, histopathology data from multiple toxicology studies were obtained from the European Union's Innovative Medicines Initiative (IMI) eTOX consortium, which constitutes a database of legacy toxicity data from member pharmaceutical companies. **HistoGraphic** is highly interactive and provides the means for identifying major target organs for each compound, and can be searched by organ or lesion descriptor to rapidly identify findings of interest. **HistoGraphic** is based on open-source software.



The histopathology data depicted in the above 'sunburst' plots have been obtained by aggregating data from 10 studies across two species for compound AZD2014. Color is used to differentiate between organs with organ segment size indicating the frequency of lesion findings. These charts are interactively zoomable. Citation: Ondov, B. D., Bergman, N. H., & Phillipy, A. M. (2011). Interactive metagenomic visualization in a Web browser. *BMC Bioinformatics*, 12, 385. Citation: Sanz, F., Pognan, F., Steger-Hartmann, T., et al. Legacy data sharing to improve drug safety assessment: the eTOX project. *Nature Reviews, Drug Discovery*, Volume 16, December 2017, 811 - Innovative Medicines Initiative (IMI).