

## **dbRED: a visualized database of A-to-I RNA editing events**

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## **Abstract**

RNA editing events is a post-transcriptional RNA sequence alteration and plays a critical role in many biological processes, including neuronal function and cancer development. However, the number of RNA editing sites has increased rapidly in the past few years by high-throughput RNA sequencing studies. Here, we developed dbRED that provided a rigorous annotation of A-to-I RNA editing, available online at <http://dbred.bioinfotech.org>. dbRED collected more than ten million RNA editing sites identified from nine projects (ENCODE, ROADMAP, CCLE, etc) in seven species including human, mouse, rat, chimpanzee, rhesus, nematode and drosophila. All RNA editing sites are calculated by four methods including separate samples method, pooled samples method, GIREMI and DeepRed. The data can be queried using a range of genomic coordinates or gene name. Search results provide information on functional localization of RNA editing, relative gene information and visualization results of editing level across tissue/organ/cell sources. Besides, dbRED comprises Jbrowse that allows users to explore A-to-I changes in their genomic context, learn more details by browsing the genome. dbRED has been designed for future studies on RNA editing.