

Title

RNA secondary structure motifs involved in the interaction with RNA binding proteins

Authors

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Abstract

The interaction between RNA and RNA-binding proteins (RBPs) plays a fundamental role in a wide variety of cellular processes like transcriptional and post-transcriptional regulation of gene expression, RNA stability, host defense against pathogens. RBPs accomplish these functions by binding target RNA molecules through specific sequence and structure motifs. The identification of these binding motifs is therefore fundamental to improve our knowledge of the cellular processes and how they are regulated. Numerous datasets have been generated for RBP domains in complex with RNA. Analyzing these data, in a recent work, a database containing 2508 sequence and 2296 secondary structure motifs in 186 RBPs and 69 human and mouse protein domains were identified in PAR-CLIP, eCLIP and HITS¹. We present here the BRIO web server designed for searching known sequence and structure protein binding motifs in RNA molecules of interest². BRIO is freely available at <http://brio.bio.uniroma2.it>.

1. Adinolfi, M. *et al.* Discovering sequence and structure landscapes in RNA interaction motifs. *Nucleic Acids Res.* **47**, 4958–4969 (2019).
2. Guarracino, A. *et al.* BRIO: a web server for RNA sequence and structure motif scan. *Nucleic Acids Res.* **49**, W67–W71 (2021).