

Resource Summary Report

Generated by [Kravitz](#) on Sep 10, 2026

RNA CoSSMos

RRID:SCR_006120

Type: Tool

Proper Citation

RNA CoSSMos (RRID:SCR_006120)

Resource Information

URL: <http://cossmos.slu.edu/>

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Description: Database to search through the nucleic acid structures from the Protein Data Bank and examine structural motifs, including (a)symmetric internal loops, bulge loops, and hairpin loops. They have compiled over 2,000 three-dimensional structures, which can now be searched using different parameters, including PDB information, experimental technique, sequence, and motif type. RNA secondary structure is important for designing therapeutics, understanding protein-RNA binding and predicting tertiary structure of RNA. Several databases and downloadable programs exist that specialize in the three-dimensional (3D) structure of RNA, but none focus specifically on secondary structural motifs such as internal, bulge and hairpin loops. To create the RNA CoSSMos database, 2156 Protein Data Bank (PDB) files were searched for internal, bulge and hairpin loops, and each loop's structural information, including sugar pucker, glycosidic linkage, hydrogen bonding patterns and stacking interactions, was included in the database. False positives were defined, identified and reclassified or omitted from the database to ensure the most accurate results possible. Users can search via general PDB information, experimental parameters, sequence and specific motif and by specific structural parameters in the subquery page after the initial search. Returned results for each search can be viewed individually or a complete set can be downloaded into a spreadsheet to allow for easy comparison. The RNA CoSSMos database is updated weekly.

Abbreviations: RNA CoSSMos

Synonyms: Znosko Lab RNA Characterization of Secondary Structure Motifs (RNA CoSSMos) database, Znosko Lab CoSSMos Database, RNA Characterization of Secondary Structure Motifs (RNA CoSSMos), RNA CoSSMos Database, RNA CoSSMos - Characterization of Secondary Structure Motifs, RNA Characterization of Secondary Structure Motifs

Resource Type: data or information resource, database

Defining Citation: [PMID:22127861](#)

Keywords: secondary structure motif, rna, three-dimensional structure, internal loop, bulge loop, hairpin loop, motif, nucleic acid, structure, secondary structure, bio.tools

Funding: NIGMS 1R15GM085699-01A1

Availability: Freely accessible, Acknowledgement requested

Resource Name: RNA CoSSMos

Resource ID: SCR_006120

Alternate IDs: nlx_151597, biotools:rna_cossmos

Alternate URLs: https://bio.tools/rna_cossmos

Record Creation Time: 20220129T080234+0000

Record Last Update: 20260905T133133+0000

Ratings and Alerts

No rating or validation information has been found for RNA CoSSMos.

No alerts have been found for RNA CoSSMos.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 1 mentions in open access literature.

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

Richardson KE, et al. (2020) RNA CoSSMos 2.0: an improved searchable database of secondary structure motifs in RNA three-dimensional structures. Database : the journal of biological databases and curation, 2020.