

Supplemental 1 The prediction process by using Diana online database (<http://diana.imis.athena-innovation.gr/DianaTools/index.php>).

The screenshot shows the Diana Tools website interface. At the top, there is a red navigation bar with tabs: HOME, SOFTWARE (which is highlighted in red), PUBLICATIONS, and CONTACT. Below the navigation bar, there are sections for WEB SERVICES and WEB APPLICATIONS.

WEB SERVICES

WEB APPLICATIONS

- microCLIP**
An AGO-CLIP-guided algorithm for the identification of transcriptome-wide miRNA-target interactions.
- TarBase v.8 - NEW!**
A database of experimentally supported miRNA:gene interactions.
- microT-CDS - UPDATED!**
Search for targets of annotated miRNAs based on the popular microT-CDS algorithm. (arrow pointing to this box)
- MirPath v.3**
A miRNA pathway analysis Web server.
- LncBase v.2**
Elaborated info for predicted & exp. verified miRNA-LncRNA interactions.
- Automated Pipelines**
Pipelines to analyse user data from small scale & high-throughput experiments.
- MR-microT (beta) UPDATED!**
Near-real time miRNA target prediction on the Cloud.
- mirPub**
Search for miRNA-related publications.
- miRGen v.3**
Accurate characterization of miRNA promoters & their regulators.

Please cite:

- Paraskevopoulou MD, Georgakilas G, Kostoulas N, Vlachos IS, Vergoulis T, Reczko M, Filippidis C, Dalamaga T, Hatzigeorgiou AG., "DIANA-microT web server v5.0: service integration into miRNA functional analysis workflows.", Nucleic Acids Res. 2013 Jul;41(Web Server issue):W169-73.
- Reczko M, Maragkakis M, Alexiou P, Grosse I, Hatzigeorgiou AG., "Functional microRNA targets in protein coding sequences.", Bioinformatics. , 2012 Jan 27.

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SEARCH

Input hsa-miR-31-5p

The screenshot shows a search interface for miRNA targets. The search bar contains "hsa-miR-31-5p". The results summary states "Results: 613 targets for miRNAs hsa-miR-31-5p. Threshold is set to 0.7." Below this is a table with columns: Ensembl Gene Id, miRNA name, miTG score, and Also Predicted (with checkboxes). The table lists 8 genes, all of which are predicted to be targets of hsa-miR-31-5p with high scores.

	Ensembl Gene Id	miRNA name	miTG score	Also Predicted
1	ENSG00000081019 (RSBN1)	hsa-miR-31-5p	0.999669962080703	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2	ENSG00000154153 (FAM134B)	hsa-miR-31-5p	0.995877082251133	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	ENSG00000206538 (VGLL3)	hsa-miR-31-5p	0.993117821514463	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
4	ENSG00000198099 (ADH4)	hsa-miR-31-5p	0.992635702280889	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
5	ENSG00000156103 (MMP16)	hsa-miR-31-5p	0.991693659481738	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
6	ENSG00000213214 (ARHGEF35)	hsa-miR-31-5p	0.991516016308427	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
7	ENSG00000072422 (RHOBTB1)	hsa-miR-31-5p	0.990425116188636	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
8	ENSG00000243943 (ZNF512)	hsa-miR-31-5p	0.989320417115851	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Input TIMP3

The screenshot shows a search interface for miRNA targets. The search bar contains "hsa-miR-31-5p TIMP3". The results summary states "Results: 613 targets for miRNAs hsa-miR-31-5p. Threshold is set to 0.7." Below this is a table with columns: Ensembl Gene Id, miRNA name, miTG score, and Also Predicted (with checkboxes). The table lists 3 genes, all of which are predicted to be targets of hsa-miR-31-5p with high scores.

	Ensembl Gene Id	miRNA name	miTG score	Also Predicted
1	ENSG00000081019 (RSBN1)	hsa-miR-31-5p	0.999669962080703	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2	ENSG00000154153 (FAM134B)	hsa-miR-31-5p	0.995877082251133	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	ENSG00000206538	hsa-miR-31-5p	0.993117821514463	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Search: hsa-mir-31-5p TIMP3 Filters ?

There are some ambiguous keywords:

- **TIMP3**

More than one genes have been found with this name. Replace with:

- TIMP3 (gene, id: ENSG00000100234, species: Homo sapiens, Ensembl version: Ensembl v77)
- Timp3 (gene, id: ENSMUSG0000020044, species: Mus musculus, Ensembl version: Ensembl v77)
- Timp3 (gene, id: ENSRNOG00000004303, species: Rattus norvegicus, Ensembl version: Ensembl v77)

Search: hsa-mir-31-5p ENSG00000100234 Filters ?

Results: 0 targets of miRNAs hsa-mir-31-5p found in genes ENSG00000100234. Threshold is set to 0.7.

Chose human

Search: hsa-mir-31-5p ENSG00000100234 Filters ?

Advanced options:

Threshold:



Search: hsa-mir-31-5p ENSG00000100234 Filters ?

Results: 1 targets of miRNAs hsa-mir-31-5p found in genes ENSG00000100234. Threshold is set to 0.1.

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Ensembl Gene Id	miRNA name	miTG score	Also Predicted
1 ENSG00000100234 (TIMP3)	hsa-miR-31-5p	0.370264413684692	

Gene details

miRNA details

PubMed links: [miRNA](#) | [gene](#) | [both](#)

UCSC graphic

Region	Binding Type	Transcript position	Score	Conservation
UTR3	6mer	747-770	0.00202578936321487	4

Position on 22:33256112-33256135
chromosome:

Conserved species: panTro2,rheMac2,canFam2,loxAfr3
 (Transcript) 5' UCUGC AG G GGCAA 3'
 CUG GUCAG A UUUGCCU
 ||. ||. ||| | . |||||
 GAU CGGUC U GAACGGA
 (miRNA) 3' C A G A 5'

Binding area: