The right tool for the right job

TAmiRNA offers a broad range of high quality RNA services performed by experts according to GLP standards

- RNA isolation
- Next Generation Sequencing
- RT-qPCR

We established standardized analytical procedures for the following technologies and biological specimens:

<table>
<thead>
<tr>
<th>Required Input</th>
<th>cells</th>
<th>tissue</th>
<th>serum / plasma</th>
<th>urine</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNA Extraction *</td>
<td>✔️</td>
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<td>Real-Time Quantitative PCR</td>
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<tr>
<td>Next Generation Sequencing (NGS)</td>
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</table>

* TAmiRNA offers RNA isolation of biofluids (serum/plasma), cells and tissue, followed by quality control of total RNA using bioanalyzer chips.

Additional options

**Extracellular Vesicles (EVs)**

purification of EVs according to official recommendations by the International Society for Extracellular Vesicles (ISEV)

**Liquid biopsy**

pilot studies for a variety of biofluids such as cerebral spine fluid (CSF), saliva, and tears

**IVD test**

proprietary normalization strategies and machine learning are applied to discover and validate multivariate biomarker signatures with robust diagnostic performance

"We are committed to help our clients to rapidly move from an idea to results, to facilitate the publication and clinical application of microRNA biomarkers!"

Matthias Hackl, CEO TAmiRNA

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Matthias Hackl, CEO TAmiRNA
### RNA service project workflow

1. Discussion of study design
2. Project proposal and quote
3. Project start
4. Sample submission
5. RNA isolation
6. RNA quality control
7. miRNA expression analysis
8. Data report and discussion
9. Project finalization

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### At a glance: TAmiRNA's RNA services

- **“One-for-All”**
  - a single partner for the whole workflow from study design to project finalization, consultation and next steps

- **Flexibility**
  - adjustments of tasks and protocols according to your individual project needs and budget

- **Quality**
  - SOPs and comprehensive QC at every step of the project

- **Speed**
  - accelerate your research – rapid turnaround times to fit your project timelines

- **Results**
  - ready-to-use data for presentations and publications as well as for additional analyses. Post project consultations to discuss next steps are included.

- **Experience**
  - benefit from our know-how of >10 years of RNA research and IVD-test development

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**Contact us for a free consultation to discuss your project**

[www.tamirna.com/services/contact-request](http://www.tamirna.com/services/contact-request)
From discovery to validation

**Discovery**
Genome-wide screening of hundreds to thousands of biomarker candidates (qPCR or NGS)
Identification of lead biomarker candidates – stop/go decision

**Verification**
Focused analysis of selected biomarker candidates using custom qPCR plates or individual assays
Selection of final biomarker signature for validation – stop/go decision

**Validation**
Targeted analysis of the selected biomarker signatures to determine diagnostic performances:
Sensitivity/Specificity, Accuracy, AUC, PPV, NPV

Exemplary results

**Step 1 | Exploratory data analysis**

**PCA**

**Heatmap | Clustering**

Step 2 | Differential expression analysis

**Scatter Plots**

**ROC Analysis**
Successful published projects


Original research article on discovery of novel microRNA biomarkers for the management of postmenopausal and diabetic osteoporosis.


Original research article on microRNAs and tissue homeostasis.


Review on microRNAs and their usability as biomarkers for bone diseases


Original research article which reports the identification of circulating microRNAs that are changed in the course of recent osteoporotic fractures in postmenopausal women, and which show osteogenic activity in vitro.

Differentially circulating miRNAs after recent osteoporotic fractures can influence osteogenic differentiation. Weilner S, et al. 2015 Bone. 28:79:43-51. PMID: 26026730

Original research article describing the donor-age dependent impact of extracellular vesicles on osteogenesis in vitro.

Annotion of additional evolutionary conserved microRNAs in CHO cells from updated genomic data. Diendorfer AB, et al. 2015 Biotechnol Bioeng. 112(7):1488-93. PMID: 25689160

Original research article investigating the importance of post-transcriptional processing by Dicer in the context of CHO cell proliferation.


Original research article describing the expansion of the Chinese hamster ovary cell miRNome through massive-parallel sequencing and microarray analysis.


Original research article reporting microarray data of microRNA and mRNA transcription in low and high producing CHO cell lines during a continuous pilot-scale fermentation process.


Original research article reporting the positive effect of an oncogenic microRNA – miR-17 – on recombinant protein expression in CHO cell lines.


Original research article reporting the importance of post-transcriptional processing of microRNAs by DICER for CHO cell proliferation.


Original research article reporting strategies for improved microRNA overexpression in CHO cell lines for cell engineering purposes.


Original research article on circulating microRNAs in chronic HIV-infected patients and elite control patients, and their potential use as therapeutic targets.
Original research article on urine derived mesenchymal stem cells for patients with osteoporosis and fragility fractures.


Original research article investigating the effect of donor age and the impact of extracellular vesicles on osteogenesis in vitro.

Vesicular Galectin-3 levels decrease with donor-age dependent impact of extracellular vesicles.

Diendorfer AB, et al. 2015 Biotechnol Orginial research article describing the importance of post-transcriptional processing by Dicer in the context of CHO cell proliferation.


Original research article on investigating in vitro shockwave treatment (IVSWT) effects on lymphatic endothelial cell (LEC) behaviour.


Original research article describing the usage of microRNAs by DICER for CHO cell line analysis of microRNA transcription and expression in CHO cell lines.


Original research article on microRNAs and their usability as biomarkers for bone diseases – Complex signatures were identified in samples from postmenopausal and diabetic patients, which showed osteogenic and adipogenic differentiation.


Original research article on discovery of biomarkers for bone diseases.


Successful published projects

‘Customer-tailored microRNA services’

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