

NTHRYS

OPC PVT LTD

SECTION • RNA

RNA Biology, Interference & Therapeutics

Hands-on wet-lab training across RNA technologies — RNA interference, microRNA analysis, antisense and oligonucleotide technology, in vitro transcription and RNA synthesis, RNA structure and functional analysis, and RNA therapeutics and delivery.

06

CATEGORIES

30

PROTOCOLS

RNA

SECTION ID

2026

EDITION

Categories & Protocols

Section **RNA** spans 6 category streams and 30 bench protocols. Every protocol carries a unique code for enrolment, tracking and certification.

RNA-IN	RNA Interference (siRNA / shRNA) siRNA / shRNA design, knockdown & validation	05
RNA-MI	microRNA Analysis miRNA enrichment, profiling, mimics & targets	05
RNA-AS	Antisense & Oligonucleotide Technology ASO, gapmer & splice-switching oligo design	05
RNA-IV	In Vitro Transcription & RNA Synthesis IVT, capping, tailing & RNA integrity QC	05
RNA-FN	RNA Structure & Functional Analysis Structure probing, RNA-protein & stability assays	05
RNA-TH	RNA Therapeutics & Delivery LNP formulation, mRNA / siRNA drugs & stability	05
TOTAL	All training protocols in section RNA	30

CODE FORMAT

RNA · IN · 01

RNA section

IN category

01 protocol

01

■ CATEGORY · RNA-IN

RNA Interference (siRNA / shRNA)

siRNA / shRNA design, knockdown & validation

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-IN-01

siRNA Design & Selection

Potent, specific duplex design.

RNA-IN-02

siRNA Transfection

Transient-knockdown delivery.

RNA-IN-03

shRNA Vector Construction

Stable-knockdown vectors.

RNA-IN-04

Stable Knockdown Lines

Selected silenced cell lines.

RNA-IN-05

Knockdown Efficiency
Validation

Transcript/protein checks.

02

CATEGORY • RNA-MI

microRNA Analysis

miRNA enrichment, profiling, mimics & targets

05
PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-MI-01

miRNA Extraction & Enrichment

Small-RNA recovery.

RNA-MI-02

miRNA RT-qPCR

Stem-loop / poly(A) qPCR.

RNA-MI-03

miRNA Profiling / Arrays

Genome-wide miRNA panels.

RNA-MI-04

miRNA Mimics & Inhibitors

Gain / loss-of-function tools.

RNA-MI-05

Target Validation (Luciferase)

3'UTR reporter assays.



■ CATEGORY · RNA-AS

Antisense & Oligonucleotide Technology

ASO, gapmer & splice-switching oligo design



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-AS-01

Antisense Oligo (ASO) Design

Target-accessible ASO design.

RNA-AS-02

Gapmer Design

RNase-H-recruiting oligos.

RNA-AS-03

Splice-Switching Oligonucleotides

Exon-modulating oligos.

RNA-AS-04

Chemical Modification (LNA / 2'-MOE)

Stability & affinity tuning.

RNA-AS-05

Oligo Delivery & Activity

Uptake & effect measurement.

04

■ CATEGORY · RNA-IV

In Vitro Transcription & RNA Synthesis

IVT, capping, tailing & RNA integrity QC

05
PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-IV-01

In Vitro Transcription (T7 / SP6)

Enzymatic RNA synthesis.

RNA-IV-02

Capping & Tailing

5' cap & poly(A) addition.

RNA-IV-03

mRNA Purification

Removing IVT by-products.

RNA-IV-04

Guide / Probe RNA Synthesis

sgRNA & probe transcription.

RNA-IV-05

RNA Quality & Integrity QC

Capping & integrity checks.



■ CATEGORY · RNA-FN

RNA Structure & Functional Analysis

Structure probing, RNA-protein & stability assays



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-FN-01

RNA Secondary Structure Probing

SHAPE / chemical probing.

RNA-FN-02

RNA-Protein Interaction (RIP / CLIP)

Binding-site mapping.

RNA-FN-03

Ribosome Profiling

Translation-footprint analysis.

RNA-FN-04

RNA Stability / Decay Assay

Half-life measurement.

RNA-FN-05

RNA Localisation Analysis

Subcellular transcript mapping.



■ CATEGORY · RNA-TH

RNA Therapeutics & Delivery

LNP formulation, mRNA / siRNA drugs & stability



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

RNA-TH-01

LNP Formulation for RNA

Lipid-nanoparticle encapsulation.

RNA-TH-02

mRNA Therapeutic Preparation

Therapeutic-grade mRNA.

RNA-TH-03

siRNA Therapeutic Conjugates

GaINAc & targeting conjugates.

RNA-TH-04

Modified-Nucleotide Incorporation

Immune-silencing modifications.

RNA-TH-05

Stability & Immunogenicity Testing

Drug-property assessment.

Harness RNA to control biology

Every protocol in Section RNA is delivered as hands-on bench training — from siRNA and miRNA work through antisense oligos, in vitro transcription, RNA functional analysis and therapeutic formulation. RNA is both the message and, increasingly, the medicine.

30 protocols

6 categories

RNA section

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