

NTHRYS

OPC PVT LTD

SECTION • LIB

Library Construction & Functional Screening

Hands-on wet-lab training in building and interrogating libraries — cDNA and genomic library construction, expression and specialised libraries, library screening strategies, high-throughput functional screening, and library management and quality control.

06

CATEGORIES

30

PROTOCOLS

LIB

SECTION ID

2026

EDITION

Categories & Protocols

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

LIB-CD	cDNA Library Construction mRNA-to-cDNA, cloning & full-length enrichment	05
LIB-GE	Genomic Library Construction Fragmentation, vector choice & coverage	05
LIB-EX	Expression & Specialised Libraries Expression, normalised, tissue & metagenomic	05
LIB-SC	Library Screening Strategies Hybridization, expression, PCR & complementation	05
LIB-HT	High-Throughput Functional Screening Pooled, arrayed, selection & reporter screens	05
LIB-MN	Library Management & QC Archiving, replication, bias QC & tracking	05
TOTAL	All training protocols in section LIB	30

CODE FORMAT

LIB • **SC** • **01**

LIB section

SC category

01 protocol

01

■ CATEGORY · LIB-CD

cDNA Library Construction

mRNA-to-cDNA, cloning & full-length enrichment

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-CD-01

mRNA Isolation & First-Strand Synthesis

Template & cDNA initiation.

LIB-CD-02

Second-Strand & ds-cDNA

Double-strand completion.

LIB-CD-03

Adapter Ligation & Vector Cloning

Library insert cloning.

LIB-CD-04

Full-Length cDNA Enrichment

5'-complete transcript capture.

LIB-CD-05

Library Titre & Quality Assessment

Complexity & insert checks.

02

CATEGORY • LIB-GE

Genomic Library Construction

Fragmentation, vector choice & coverage

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-GE-01

**Genomic DNA
Fragmentation**

Controlled insert sizing.

LIB-GE-02

**Vector Selection (Plasmid /
BAC / Cosmid)**

Capacity-matched vectors.

LIB-GE-03

Insert Ligation & Packaging

Cloning & in vitro packaging.

LIB-GE-04

Library Amplification

Representative expansion.

LIB-GE-05

**Genome Coverage
Assessment**

Completeness estimation.



■ CATEGORY · LIB-EX

Expression & Specialised Libraries

Expression, normalised, tissue & metagenomic



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-EX-01

Expression cDNA Library

Protein-displaying libraries.

LIB-EX-02

Normalised / Subtracted Library

Rare-transcript enrichment.

LIB-EX-03

Tissue-Specific Library

Source-restricted libraries.

LIB-EX-04

Metagenomic Library

Environmental-DNA libraries.

LIB-EX-05

ORF / Clone Collections

Defined ORFeome resources.

04

■ CATEGORY · LIB-SC

Library Screening Strategies

Hybridization, expression, PCR & complementation

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-SC-01

Hybridization Screening

Probe-based clone detection.

LIB-SC-02

**Antibody / Expression
Screening**

Protein-product detection.

LIB-SC-03

PCR-Based Screening

Pool-deconvolution PCR.

LIB-SC-04

**Functional
Complementation**

Phenotype-rescue selection.

LIB-SC-05

Sequence-Based Screening

Read-out by sequencing.



■ CATEGORY · LIB-HT

High-Throughput Functional Screening

Pooled, arrayed, selection & reporter screens



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-HT-01

Pooled Screen Design

Mixed-population screening.

LIB-HT-02

Arrayed Screen Design

One-clone-per-well screening.

LIB-HT-03

Selection-Based Screening

Survival-linked enrichment.

LIB-HT-04

Reporter-Based HT Screening

Signal-output screening.

LIB-HT-05

Hit Deconvolution & Validation

Confirming true positives.



■ CATEGORY · LIB-MN

Library Management & QC

Archiving, replication, bias QC & tracking



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

LIB-MN-01

Clone Archiving & Storage

Long-term clone preservation.

LIB-MN-02

Library Replication & Distribution

Faithful copy generation.

LIB-MN-03

Representation & Bias QC

Skew & dropout monitoring.

LIB-MN-04

Library Re-Amplification

Maintaining representation.

LIB-MN-05

Database & Inventory Tracking

Clone-location management.

Build & screen vast libraries

Every protocol in Section LIB is delivered as hands-on bench training — from cDNA and genomic library construction through expression libraries, screening strategies and high-throughput hit deconvolution. A well-built library plus a sharp screen is how rare functional clones are found.

30 protocols

6 categories

LIB section

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