

NTHRYS

OPC PVT LTD

CATALOGUE 07 • NBPD

Primer, Probe & Construct Design

A complete industrial catalogue of hands-on training modules in in-silico assay and construct design — from hybridisation thermodynamics and PCR primer design to qPCR probe chemistry, specificity validation, sequencing panel and capture design, cloning and synthetic construct design, CRISPR guide design and batch design automation. Every module is issued against its own controlled protocol, contact-hour allocation and published fee.

59 PROTOCOL-BACKED MODULES • 10 CATEGORY STREAMS
1586 CONTACT HOURS • 2026 EDITION

59

MODULES

10

STREAMS

1586

HOURS

59

PROTOCOLS

Program Categories at a Glance

This catalogue lists every design method our training programs are equipped to operate and teach, organised into 10 technology streams. Each module carries a unique product code, a controlled protocol document, an individually assessed contact-hour allocation and its own published fee. No two protocols are priced alike — duration and fee follow the design complexity, validation load and assessment weight of that specific module.

STREAM	CATEGORY	FOCUS DESCRIPTION	MODULES	HOURS	DAYS	BUNDLE (INR)
NBPD-FD	Oligonucleotide Design Foundations	Thermodynamics, Tm, structure & degeneracy	6	132	24	40,300
NBPD-PC	Standard PCR Primer Design	Amplicon strategy, multiplexing & troubleshooting	6	162	29	50,200
NBPD-QP	qPCR, Probe & Assay Design	Probe chemistries, multiplexing & validation plans	6	160	29	49,700
NBPD-SP	Specificity, Off-Target & Validation	In-silico PCR, cross-reactivity & variant awareness	6	156	28	48,300
NBPD-SQ	Sequencing & Genotyping Assay Design	Sanger, panels, capture, markers & genotyping	6	176	31	54,900
NBPD-HY	Hybridisation Probe & Silencing Design	Arrays, FISH, blots & antisense design	5	130	24	40,200
NBPD-CL	Cloning & Construct Design	Restriction strategy, assembly & verification	6	158	29	49,000
NBPD-SY	Synthetic Construct & Expression Design	Codon optimisation, cassettes, tags & synthesis	6	168	31	52,400
NBPD-GE	Genome Editing & Guide Design	Guide selection, off-targets, donors & screening	6	176	32	54,900
NBPD-AU	Automation, Batch Design & Documentation	Pipelines, panel-scale design & sign-off records	6	168	30	52,400
Complete NBPD catalogue			59	1586	287	376,400

HOW TO READ A MODULE CODE

NBPD – FD – 01

NBPD
Nthrys Bioinformatics catalogue — Primer, Probe & Construct Design

FD
Category stream code

01
Module number within the stream

HOW TO READ A PROTOCOL REFERENCE

PRT/NBPD/FD/01

PRT
Controlled protocol held in the training SOP register

NBPD/FD/01
Maps one-to-one to the module code alongside

Bundle figures are the discounted price for enrolling in every module of that stream together. Individual module hours and fees are printed on each category page. All fees exclude applicable GST.

Every Module Is a Controlled Protocol

There is no flat course fee in this catalogue. Each module is written up as its own protocol document, timed against the work it actually contains, and priced on that basis — contact hours, algorithmic and compute load, number of tools operated and the depth of the assessment task.

CONTENTS OF EVERY PRT DOCUMENT

01

Scope & competency statement
 What the trainee will be able to do on completion, mapped to the module code.

02

Resource inventory
 Tools, versions, reference databases and datasets recorded before start.

03

Stepwise procedure
 Numbered operations with decision points, parameters and expected intermediates.

04

Worked reference exercise
 A supplied query and subject set with the correct output for self-verification.

05

Acceptance criteria
 The result a trainee must reproduce for the protocol to be signed as complete.

06

Failure modes & troubleshooting
 Known error states, misleading hits and how each is resolved.

07

Assessment task & marking
 The independent task, its weighting and the pass threshold.

08

Completion record
 Trainer sign-off, date, hours logged and certificate serial entry.

MODULE DURATION RANGE

18 – 38 hours

Allocated per protocol, not per tier. A scoring-concepts module runs 18 hours; profile-profile remote homology detection runs 38.

MODULE FEE RANGE

INR 6,400 – 14,100

Set individually against each protocol. Iterative profile search, genome-scale alignment and pipeline construction carry the highest compute and supervision load.

1586

TOTAL HOURS

287

TOTAL DAYS

59

PROTOCOLS

ENROLMENT OPTION	SCOPE	HOURS	FEE (INR)	SAVING
Single Module	Any one module code, priced as printed on its category page	18 – 38	6,400 – 14,100	—
Stream Bundle	Every module within one category stream	130 – 176	40,200 – 54,900	15%
Core Design Track	Streams FD, PC, QP, SP, SQ — 30 modules	786	223,300	22%
Professional Track	Streams FD through SY — 47 modules	1242	326,000	28%
Complete NBPD Catalogue	All 10 streams — 59 modules, 59 protocols	1586	376,400	35%

WHAT THE MODULE FEE INCLUDES

- Workstation access** — dedicated Linux workstation for the logged hours of the module
- Issued protocol** — the controlled PRT document, retained by the candidate
- Reference datasets** — query sets, subject databases and verified reference outputs
- Certification** — serially numbered certificate quoting module code, protocol reference and hours
- Post-training support** — 60 days of query support by email

ENROLMENT & PAYMENT TERMS

- Registration** — INR 1,000 per candidate, adjusted against the module fee
- Taxes** — GST applicable at prevailing rates over and above listed fees
- Live-online mode** — 80% of the listed on-campus fee for eligible modules
- Concessions** — 10% for groups of three or more; 15% against a valid institutional identity card
- Scheduling** — rolling monthly intakes; custom dates for institutional groups
- Validity** — fees quoted for the 2026 edition, confirmed at the time of enrolment

01

CATEGORY • NBPD-FD

Oligonucleotide Design Foundations

Thermodynamics, T_m, structure & degeneracy

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-FD-01	Hybridisation Thermodynamics & Nearest-Neighbour Models Duplex stability, enthalpy & entropy terms.	PRT/NBPD/FD/01	24 HOURS	04 DAYS	8,600
NBPD-FD-02	T_m Calculation Methods & Buffer Corrections Salt, magnesium & formamide corrections in practice.	PRT/NBPD/FD/02	20 HOURS	04 DAYS	7,100
NBPD-FD-03	Composition Rules: GC, Complexity & Runs GC clamps, homopolymer runs & balance rules.	PRT/NBPD/FD/03	18 HOURS	03 DAYS	6,400
NBPD-FD-04	Secondary Structure: Hairpins & Dimers Self-dimer, cross-dimer & hairpin evaluation.	PRT/NBPD/FD/04	24 HOURS	04 DAYS	8,700
NBPD-FD-05	Degenerate Primer Design & IUPAC Coding Degeneracy budgeting & wobble placement.	PRT/NBPD/FD/05	26 HOURS	05 DAYS	9,400
NBPD-FD-06	Oligo Modifications & Design Implications Labels, blockers & modifications that alter design.	PRT/NBPD/FD/06	20 HOURS	04 DAYS	7,200

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 132 HOURS • 24 DAYS

~~47,400~~ 40,300 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

02

CATEGORY • NBPD-PC

Standard PCR Primer Design

Amplicon strategy, multiplexing & troubleshooting

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-PC-01	Target Selection & Amplicon Design Strategy Region choice, amplicon size & purpose fit.	PRT/NBPD/PC/01	22 HOURS	04 DAYS	7,900
NBPD-PC-02	Parameter Control in Primer Design Software Constraint setting, penalties & candidate ranking.	PRT/NBPD/PC/02	26 HOURS	05 DAYS	9,400
NBPD-PC-03	Specificity Checking Against Genomes Genome-wide checks & unintended product detection.	PRT/NBPD/PC/03	28 HOURS	05 DAYS	10,200
NBPD-PC-04	Multiplex PCR Primer Set Design Compatibility matrices, dimer avoidance & balance.	PRT/NBPD/PC/04	34 HOURS	06 DAYS	12,600
NBPD-PC-05	Long-Range & GC-Rich Template Design Difficult template strategy & primer adaptation.	PRT/NBPD/PC/05	28 HOURS	05 DAYS	10,200
NBPD-PC-06	Design Review of Failed Primers Diagnosing failure from design parameters & redesign.	PRT/NBPD/PC/06	24 HOURS	04 DAYS	8,700

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 162 HOURS • 29 DAYS

~~59,000~~ 50,200 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

03

CATEGORY • NBPD-QP

qPCR, Probe & Assay Design

Probe chemistries, multiplexing & validation plans

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-QP-01	qPCR Amplicon Design Constraints Amplicon length, efficiency & exon-junction placement.	PRT/NBPD/QP/01	24 HOURS	04 DAYS	8,700
NBPD-QP-02	Hydrolysis Probe Design Probe placement, Tm offset & quencher considerations.	PRT/NBPD/QP/02	30 HOURS	05 DAYS	11,000
NBPD-QP-03	Beacons, Scorpions & Alternative Chemistries Structure-dependent chemistries & design rules.	PRT/NBPD/QP/03	26 HOURS	05 DAYS	9,500
NBPD-QP-04	In-Silico Reference Gene Selection Stability criteria & candidate normaliser screening.	PRT/NBPD/QP/04	22 HOURS	04 DAYS	8,000
NBPD-QP-05	Multiplex qPCR Probe & Channel Compatibility Dye selection, spectral overlap & assay balance.	PRT/NBPD/QP/05	32 HOURS	06 DAYS	11,800
NBPD-QP-06	Assay Validation Planning & Efficiency Criteria Standard curves, LOD/LOQ & acceptance criteria.	PRT/NBPD/QP/06	26 HOURS	05 DAYS	9,500

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 160 HOURS • 29 DAYS

~~58,500~~ 49,700 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

04

CATEGORY • NBPD-SP

Specificity, Off-Target & Validation

In-silico PCR, cross-reactivity & variant awareness

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-SP-01	In-Silico PCR & Amplicon Prediction Predicted products, mismatches & product sizing.	PRT/NBPD/SP/01	26 HOURS	05 DAYS	9,400
NBPD-SP-02	Cross-Reactivity Screening Across Organisms Near-neighbour panels & exclusivity testing.	PRT/NBPD/SP/02	30 HOURS	05 DAYS	11,000
NBPD-SP-03	Variant-Aware Primer Placement Avoiding polymorphic sites & allele dropout.	PRT/NBPD/SP/03	28 HOURS	05 DAYS	10,200
NBPD-SP-04	Repeat, Pseudogene & Paralog Avoidance Unique region selection & paralog discrimination.	PRT/NBPD/SP/04	26 HOURS	05 DAYS	9,500
NBPD-SP-05	Template Quality Effects on Design Degraded, GC-rich & structured template strategy.	PRT/NBPD/SP/05	22 HOURS	04 DAYS	8,000
NBPD-SP-06	Documented In-Silico Validation Reports Evidence package for an assay design release.	PRT/NBPD/SP/06	24 HOURS	04 DAYS	8,700

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 156 HOURS • 28 DAYS

~~56,800~~ 48,300 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

05

CATEGORY • NBPD-SQ

Sequencing & Genotyping Assay Design

Sanger, panels, capture, markers & genotyping

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-SQ-01	Sanger Primer Design & Primer Walking Read-window placement & walking strategy.	PRT/NBPD/SQ/01	22 HOURS	04 DAYS	8,000
NBPD-SQ-02	Amplicon Sequencing Panel Design Tiling, coverage uniformity & pool construction.	PRT/NBPD/SQ/02	34 HOURS	06 DAYS	12,600
NBPD-SQ-03	Target Enrichment & Capture Probe Design Bait tiling, GC balance & off-target control.	PRT/NBPD/SQ/03	38 HOURS	07 DAYS	14,100
NBPD-SQ-04	Marker Primer Design: 16S, ITS & COI Conserved-region primers & taxonomic resolution.	PRT/NBPD/SQ/04	28 HOURS	05 DAYS	10,200
NBPD-SQ-05	Genotyping Assay Design In Silico Allele-specific, RFLP & melt-based assay design.	PRT/NBPD/SQ/05	30 HOURS	05 DAYS	11,000
NBPD-SQ-06	Barcoding, Indexing & Adapter Considerations Index distance, adapter compatibility & demultiplexing.	PRT/NBPD/SQ/06	24 HOURS	04 DAYS	8,700

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 176 HOURS • 31 DAYS

~~64,600~~ 54,900 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

06

CATEGORY • NBPD-HY

Hybridisation Probe & Silencing Design

Arrays, FISH, blots & antisense design

5

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-HY-01	Microarray Probe Design Principles Probe length, Tm uniformity & cross-hybridisation.	PRT/NBPD/HY/01	28 HOURS	05 DAYS	10,100
NBPD-HY-02	FISH Probe Design & Specificity Target region selection & repeat suppression.	PRT/NBPD/HY/02	26 HOURS	05 DAYS	9,500
NBPD-HY-03	Blot Probe Design & Labelling Strategy Probe length, specificity & labelling choice.	PRT/NBPD/HY/03	20 HOURS	04 DAYS	7,200
NBPD-HY-04	Antisense, siRNA & shRNA Design Target site selection, seed effects & off-targets.	PRT/NBPD/HY/04	32 HOURS	06 DAYS	11,800
NBPD-HY-05	Probe Set QC & Cross-Hybridisation Control Set-level checks & specificity documentation.	PRT/NBPD/HY/05	24 HOURS	04 DAYS	8,700

STREAM BUNDLE • 5 MODULES • 5 PROTOCOLS • 130 HOURS • 24 DAYS

~~47,300~~ 40,200 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

07

CATEGORY • NBPD-CL

Cloning & Construct Design

Restriction strategy, assembly & verification

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-CL-01	Restriction Analysis & Cloning Strategy Site mapping, compatible ends & strategy choice.	PRT/NBPD/CL/01	26 HOURS	05 DAYS	9,400
NBPD-CL-02	Overlap-Based Assembly Design Overlap length, Tm matching & fragment order.	PRT/NBPD/CL/02	30 HOURS	05 DAYS	11,000
NBPD-CL-03	Type IIS & Golden Gate Assembly Design Fusion site selection, domestication & part design.	PRT/NBPD/CL/03	32 HOURS	06 DAYS	11,800
NBPD-CL-04	Recombination-Based Cloning Design Recombination site placement & frame integrity.	PRT/NBPD/CL/04	26 HOURS	05 DAYS	9,500
NBPD-CL-05	Vector Selection & Plasmid Map Construction Backbone choice, markers & annotated maps.	PRT/NBPD/CL/05	24 HOURS	04 DAYS	8,700
NBPD-CL-06	Junction Verification Primer Design Colony PCR and sequencing primers for junctions.	PRT/NBPD/CL/06	20 HOURS	04 DAYS	7,200

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 158 HOURS • 29 DAYS

~~57,600~~ 49,000 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

08

CATEGORY • NBPD-SY

Synthetic Construct & Expression Design

Codon optimisation, cassettes, tags & synthesis

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-SY-01	Codon Optimisation & Host Bias Usage tables, CAI & over-optimisation risks.	PRT/NBPD/SY/01	32 HOURS	06 DAYS	11,800
NBPD-SY-02	Sequence Sanitisation for Synthesis Forbidden sites, repeats & extreme GC removal.	PRT/NBPD/SY/02	26 HOURS	05 DAYS	9,500
NBPD-SY-03	Expression Cassette Design Promoters, ribosome binding sites & terminators.	PRT/NBPD/SY/03	34 HOURS	06 DAYS	12,600
NBPD-SY-04	Fusion Tags, Linkers & Cleavage Sites Tag placement, linker choice & protease sites.	PRT/NBPD/SY/04	28 HOURS	05 DAYS	10,200
NBPD-SY-05	Secretion & Localisation Construct Design Signal sequences & targeting element selection.	PRT/NBPD/SY/05	26 HOURS	05 DAYS	9,500
NBPD-SY-06	Synthesis Feasibility & Manufacturability Checks Vendor constraint screening & redesign.	PRT/NBPD/SY/06	22 HOURS	04 DAYS	8,000

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 168 HOURS • 31 DAYS

~~61,600~~ 52,400 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

09

CATEGORY • NBPD-GE

Genome Editing & Guide Design

Guide selection, off-targets, donors & screening

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-GE-01	CRISPR Target Site Selection & PAM Rules Nuclease choice, PAM constraints & site framing.	PRT/NBPD/GE/01	28 HOURS	05 DAYS	10,200
NBPD-GE-02	On-Target Efficiency Scoring Activity scoring models & candidate ranking.	PRT/NBPD/GE/02	26 HOURS	05 DAYS	9,500
NBPD-GE-03	Off-Target Prediction & Specificity Assessment Genome-wide off-target search & risk grading.	PRT/NBPD/GE/03	34 HOURS	06 DAYS	12,600
NBPD-GE-04	HDR Donor & Repair Template Design Homology arms, silent edits & template format.	PRT/NBPD/GE/04	32 HOURS	06 DAYS	11,800
NBPD-GE-05	Base & Prime Editing Design Considerations Editing windows, bystanders & pegRNA design.	PRT/NBPD/GE/05	30 HOURS	05 DAYS	11,000
NBPD-GE-06	Edit Screening & Validation Assay Design Screening primers, indel assays & confirmation.	PRT/NBPD/GE/06	26 HOURS	05 DAYS	9,500

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 176 HOURS • 32 DAYS

~~64,600~~ 54,900 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

10

CATEGORY • NBPD-AU

Automation, Batch Design & Documentation

Pipelines, panel-scale design & sign-off records

6

MODULES

CODE	TRAINING MODULE	PROTOCOL REF	DURATION		FEE (INR)
NBPD-AU-01	Batch Primer Design Pipelines Scripted design over many targets & result capture.	PRT/NBPD/AU/01	34 HOURS	06 DAYS	12,600
NBPD-AU-02	Scripted Design and Specificity Integration Chaining design with specificity checks end to end.	PRT/NBPD/AU/02	32 HOURS	06 DAYS	11,900
NBPD-AU-03	Panel-Scale Design & Set Optimisation Set-level optimisation, balance & iteration.	PRT/NBPD/AU/03	36 HOURS	06 DAYS	13,300
NBPD-AU-04	LIMS-Ready Output & Oligo Ordering Files Order sheets, plate layouts & naming conventions.	PRT/NBPD/AU/04	22 HOURS	04 DAYS	8,000
NBPD-AU-05	Design QC Checklists & Sign-Off Records Controlled checks before a design is released.	PRT/NBPD/AU/05	20 HOURS	04 DAYS	7,200
NBPD-AU-06	Version Control & Reuse of Validated Designs Design registries, versioning & retrieval.	PRT/NBPD/AU/06	24 HOURS	04 DAYS	8,700

STREAM BUNDLE • 6 MODULES • 6 PROTOCOLS • 168 HOURS • 30 DAYS

~~61,700~~ 52,400 INR

Each module is enrolled and certified independently against its own protocol reference, or taken together as the discounted stream bundle. Duration is the logged contact-hour allocation for that protocol; days are computed at six contact hours per working day. Fees exclude applicable GST.

Build a Career in Molecular Assay Design

Every module in this catalogue is delivered as hands-on training on live sequence targets and working design installations, against a controlled protocol issued at the start and signed off at the end — covering hybridisation thermodynamics and oligo composition rules, standard and multiplex PCR primer design, qPCR probe chemistries and assay validation planning, in-silico specificity and cross-reactivity screening, sequencing panel and capture probe design, hybridisation and silencing probe design, cloning strategy and assembly junctions, codon-optimised synthetic constructs and expression cassettes, CRISPR guide and donor design, and the batch pipelines and sign-off records that make a design set orderable. Mix and match modules to design a track that fits your goals.

59TRAINING
MODULES

59CONTROLLED
PROTOCOLS

10CATEGORY
STREAMS

1586CONTACT
HOURS

07OF THE NTHRYS
BIOINFORMATICS SERIES**NTHRYS OPC PVT LTD**

INDUSTRIAL TRAINING • BIOINFORMATICS DIVISION

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CATALOGUE

NBPD • 2026 Edition