

NTHRYS

OPC PVT LTD

SECTION • DSP

Antibody / Protein Engineering & Display Technologies

Hands-on wet-lab training in selecting and engineering binders — phage display, cell-surface and ribosome display, antibody engineering, protein-scaffold engineering, selection and screening strategy, and binder characterisation and optimisation.

06

CATEGORIES

30

PROTOCOLS

DSP

SECTION ID

2026

EDITION

Categories & Protocols

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

DSP-PH	Phage Display Library construction, biopanning & clone screening	05
DSP-CD	Cell-Surface & Ribosome Display Yeast, bacterial, ribosome & mRNA display	05
DSP-AB	Antibody Engineering scFv/Fab build, humanisation & affinity maturation	05
DSP-PE	Protein Scaffold Engineering Non-antibody scaffolds, nanobodies & stability	05
DSP-SE	Selection & Screening Strategy Affinity/function selection & NGS of libraries	05
DSP-CH	Characterisation & Optimisation Kinetics, specificity & developability	05
TOTAL	All training protocols in section DSP	30

CODE FORMAT

DSP • **AB** • **01**

DSP section

AB category

01 protocol

01

■ CATEGORY · DSP-PH

Phage Display

Library construction, biopanning & clone screening

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-PH-01

Phage Library Construction

Diverse displayed-repertoire build.

DSP-PH-02

Biopanning Selection

Iterative affinity selection.

DSP-PH-03

Antibody Fragment (scFv / Fab) Display

Displayed antibody fragments.

DSP-PH-04

Peptide Phage Display

Short-peptide binder discovery.

DSP-PH-05

Clone Screening & Enrichment

Hit identification & tracking.

02

■ CATEGORY · DSP-CD

Cell-Surface & Ribosome Display

Yeast, bacterial, ribosome & mRNA display

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-CD-01

Yeast Surface Display

FACS-compatible display.

DSP-CD-02

Bacterial Surface Display

Cell-wall-anchored display.

DSP-CD-03

Mammalian Display

In-context binder selection.

DSP-CD-04

Ribosome Display

Cell-free in vitro selection.

DSP-CD-05

mRNA / cDNA Display

Genotype-phenotype linkage.



■ CATEGORY · DSP-AB

Antibody Engineering

scFv/Fab build, humanisation & affinity maturation



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-AB-01

scFv / Fab Construction

Recombinant fragment assembly.

DSP-AB-02

Humanisation

Framework grafting & design.

DSP-AB-03

Affinity Maturation

Iterative affinity improvement.

DSP-AB-04

Bispecific Antibody
Engineering

Dual-target binder design.

DSP-AB-05

Antibody Format
Conversion

IgG / fragment reformatting.

04

■ CATEGORY · DSP-PE

Protein Scaffold Engineering

Non-antibody scaffolds, nanobodies & stability

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-PE-01

Non-Antibody Scaffold Selection

Alternative binding scaffolds.

DSP-PE-02

Nanobody Engineering

Single-domain antibody work.

DSP-PE-03

Scaffold Library Design

Diversified-loop libraries.

DSP-PE-04

Enzyme Engineering by Display

Activity-based selection.

DSP-PE-05

Stability Engineering

Thermostability improvement.



■ CATEGORY · DSP-SE

Selection & Screening Strategy

Affinity/function selection & NGS of libraries



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-SE-01

Affinity-Based Selection

Binding-strength enrichment.

DSP-SE-02

Function-Based Selection

Activity-linked selection.

DSP-SE-03

Negative / Counter-Selection

Off-target depletion.

DSP-SE-04

High-Throughput Clone Screening

Parallel hit testing.

DSP-SE-05

NGS of Selected Libraries

Repertoire deep-sequencing.



■ CATEGORY · DSP-CH

Characterisation & Optimisation

Kinetics, specificity & developability



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

DSP-CH-01

Binding Kinetics (SPR / BLI)

Affinity & rate measurement.

DSP-CH-02

Specificity & Cross-Reactivity

Off-target profiling.

DSP-CH-03

Expression & Production of Hits

Scaling lead candidates.

DSP-CH-04

Developability Assessment

Manufacturability screening.

DSP-CH-05

Lead Optimisation

Refining final candidates.

Select & engineer better binders

Every protocol in Section DSP is delivered as hands-on bench training — from phage and surface display through antibody and scaffold engineering, selection strategy and lead optimisation. Display technologies let you search astronomically large libraries for the one binder you need.

30 protocols

6 categories

DSP section

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