

NTHRYS

OPC PVT LTD

SECTION • ISH

In Situ Hybridization & Cytogenetics

Hands-on wet-lab training in localising sequences on chromosomes and in tissue — fluorescence in situ hybridization, chromosome preparation and karyotyping, comparative genomic hybridization, tissue and chromogenic ISH, probe systems, and cytogenetic imaging and interpretation.

06

CATEGORIES

30

PROTOCOLS

ISH

SECTION ID

2026

EDITION

Categories & Protocols

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

ISH-FI	Fluorescence In Situ Hybridization (FISH) Metaphase, interphase & multicolour FISH	05
ISH-CH	Chromosome Preparation & Karyotyping Harvest, banding & karyotype classification	05
ISH-CG	Comparative & Genomic Hybridization CGH, array-CGH, painting & spectral karyotyping	05
ISH-TI	Tissue & Chromogenic In Situ Hybridization CISH, RNA-ISH & brightfield tissue detection	05
ISH-PR	Probe Systems & Labelling Locus-specific, centromeric & paint probe generation	05
ISH-AN	Imaging, Analysis & Interpretation Microscopy, scoring, automation & ISCN reporting	05
TOTAL	All training protocols in section ISH	30

CODE FORMAT

ISH · FI · 01

ISH section

FI category

01 protocol

01

■ CATEGORY · ISH-FI

Fluorescence In Situ Hybridization (FISH)

Metaphase, interphase & multicolour FISH

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-FI-01

FISH Probe Design & Labelling

Target-specific labelled probes.

ISH-FI-02

Metaphase FISH

Chromosome-spread hybridization.

ISH-FI-03

Interphase FISH

Non-dividing-nucleus analysis.

ISH-FI-04

Multicolour FISH (mFISH)

Simultaneous multi-target detection.

ISH-FI-05

Signal Detection & Scoring

Counting & interpreting signals.

02

■ CATEGORY · ISH-CH

Chromosome Preparation & Karyotyping

Harvest, banding & karyotype classification

05
PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-CH-01

Metaphase Chromosome Harvest

Arrest & fixation of mitoses.

ISH-CH-02

G-Banding (GTG)

Trypsin-Giemsa banding.

ISH-CH-03

Karyotype Analysis & Classification

Chromosome pairing & ordering.

ISH-CH-04

Chromosome Spreading & Slide Prep

Optimal metaphase dropping.

ISH-CH-05

Specialised Banding (C / R / Q)

Heterochromatin & reverse banding.



■ CATEGORY · ISH-CG

Comparative & Genomic Hybridization

CGH, array-CGH, painting & spectral karyotyping



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-CG-01

Comparative Genomic Hybridization

Genome-wide imbalance detection.

ISH-CG-02

Array CGH

High-resolution copy-number arrays.

ISH-CG-03

Chromosome Painting

Whole-chromosome labelling.

ISH-CG-04

Spectral Karyotyping (SKY)

All-chromosome colour mapping.

ISH-CG-05

Copy-Number Mapping

Gain / loss localisation.

04

■ CATEGORY · ISH-TI

Tissue & Chromogenic In Situ Hybridization

CISH, RNA-ISH & brightfield tissue detection

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-TI-01

Chromogenic ISH (CISH)

Enzyme-substrate brightfield ISH.

ISH-TI-02

RNA In Situ Hybridization

Transcript localisation in tissue.

ISH-TI-03

Tissue Section Preparation

Fixation, sectioning & mounting.

ISH-TI-04

Probe Penetration & Hybridization

Permeabilisation & binding.

ISH-TI-05

Brightfield Detection & Scoring

Signal grading on tissue.



■ CATEGORY · ISH-PR

Probe Systems & Labelling

Locus-specific, centromeric & paint probe generation



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-PR-01

**Locus-Specific Probe
Generation**

Single-gene targeting probes.

ISH-PR-02

**Centromeric / Telomeric
Probes**

Repeat-region enumeration.

ISH-PR-03

**Whole-Chromosome Paint
Probes**

Chromosome-wide coverage.

ISH-PR-04

**Hapten & Fluorophore
Labelling**

Direct & indirect labelling.

ISH-PR-05

Probe Validation & QC

Specificity & signal checks.



■ CATEGORY · ISH-AN

Imaging, Analysis & Interpretation

Microscopy, scoring, automation & ISCN reporting



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

ISH-AN-01

Fluorescence Microscopy & Imaging

Multichannel signal capture.

ISH-AN-02

Signal Enumeration & Scoring

Quantitative signal counting.

ISH-AN-03

Automated Image Capture

Scanning & metaphase finding.

ISH-AN-04

Cytogenetic Nomenclature (ISCN)

Standardised karyotype notation.

ISH-AN-05

Reporting & Interpretation

Clinical / research reporting.

Map signals onto chromosomes

Every protocol in Section ISH is delivered as hands-on bench training — from FISH probe design and karyotyping through comparative genomic hybridization, tissue ISH and cytogenetic interpretation. In situ methods put a sequence back in its spatial and chromosomal context.

30 protocols

6 categories

ISH section

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