



Toxicological Pathology Training Modules

Module 5

Molecular and Digital Pathology

(selected online sessions of the MADPATH course)



Tuesday, 14th April – Wednesday, 15th April 2026

Tuesday 08:45 a.m. – 12:30 p.m. (CEST)	
08:45-09:00h	Introduction of participants & Overview of training course and learning outcomes Florence Bernex, Coordinator (Associate professor, scientific manager and Investigative Pathologist RHEM & member of SFPT executive committee, France)
09:00-10:30h	Introduction to Immunohistochemistry IHC & immunofluorescence IF <ul style="list-style-type: none"> <u>Learning objectives:</u> To provide an understanding/knowledge of general principles of IHC. <u>Key concepts:</u> sample management (FFPE, frozen), antigen retrieval methods, antibodies, revelation/detection systems, automates, reagents, types of slides. Anne-Laure Bauchet (IHC team manager & Translational medicine Lead, Sanofi, France)
10:30h	Coffee Break
11.00-12.30h	Other techniques Pot-pourri <ul style="list-style-type: none"> <u>Learning objectives:</u> To provide an understanding/knowledge of a panel of other molecular pathology techniques <u>Key concepts:</u> different approaches of multiplexing, tissue mass spectrometry, light sheet microscopy, Duolink, proximity ligation assay, protein degradation Stéphane Lezmi (Investigative and Toxicologic Pathologist, Excilone, France)
Wednesday 09:00 a.m. – 12:00 p.m. (CEST)	
09.00-10.00h	Techniques for detection of RNAs in tissue sections: technique & applications <ul style="list-style-type: none"> <u>Learning objectives:</u> To provide an understanding/knowledge of techniques for detection of RNA <i>in situ</i> in tissue sections <u>Key concepts:</u> including RNA scope, RNA seq/multiplexing by hybridization or antibodies; topographic analysis of the gene expression (up to 800 mRNA on a tissue section) NANOSTring (DSP) Dirk Schaudien (Fraunhofer ITEM, Germany)
10.00h	Coffee Break
10.30-12.00h	What covers digital pathology? <ul style="list-style-type: none"> <u>Learning objectives:</u> Provide general understanding/knowledge of a digital pathology system <u>Key concepts:</u> Foundations of Whole Slide Images (WSI) technology; slide scanners; hardware (including displays and input devices); software; IT infrastructure (including data integrity, life cycle management, storage/archival, databases, cloud, performance of data access); ancillary data (metadata, nomenclature/ontologies, annotations, classifiers, IA/AI results) + key concepts in image analysis and use of artificial intelligence. Lise Bertrand (EU Digital Pathology Lead, Charles River, France) & Erio Barale-Thomas (Scientific Associate Director, Pathology – Janssen R&D, Belgium)

This ToxPath module contains selected session (distance learning, DL) of the *Molecular and Digital pathology training course* organized by SFPT and Oniris in cooperation with the ESTP.

You can find the full program and the link to register for the presential sessions (with costs) following this link:

[Formations vétérinaires: Molecular and digital pathology \(MADPATH\)](#)

