

ESP Advanced Training Centre for Molecular Pathology
with an emphasis on Liquid Biopsy
Nice, France

Name of the center, address	Laboratory of Clinical and Experimental Pathology Hôpital Pasteur Bâtiment J 30 Voie Romaine 06000 Nice France
Chair of the Center	Prof. Dr. Marius Ilié
Email	ilie.m@hu-nice.fr

Details about specific areas in which training can be offered

Molecular Pathology Liquid Biopsy	<p>The Molecular Pathology unit offers a full spectrum of molecular support services, known for their operational excellence and strong academic bent, and provides molecular services to clinicians and other health care-providers within South of France, while also serving as a top-tiered reference laboratory at the regional, national, and international level.</p> <p>The Molecular Pathology unit offers molecular testing for therapeutic decision-making, and disease monitoring in lung and melanoma (more than 2000 molecular tests/year). In 2013, the Molecular Pathology unit became the first pathology laboratory in France to get accreditation by the COFRAC (ISO 15189 norm) for pyrosequencing and FISH, and in 2017 the first to get COFRAC accreditation for Next-Generation Sequencing in somatic mutation detection.</p> <p>The Liquid Biopsy Laboratory (LBL) specializes in the analysis of cell-free DNA/RNA. The LBL is currently a national and international reference for the study of liquid biopsy, where an average volume of 600 blood samples from hospitals and research centers throughout the French and Europe</p> <p>Molecular testing on cell-free DNA in lung cancer patients: i) cobas® EGFR Mutation Test v2, Roche; ii) Next-Generation Sequencing (Oncomine Lung cfDNA Assay, Thermo Fisher Scientific); iii) Digital PCR System: Naica system™, Stilla technologies.</p>
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Number of positions offered for each year, expected duration of the training:
A minimum of 1 month is required, usually 3 to 6 months. The applicant will receive help to fund a stay superior to 3 months. The department can accommodate one position per training slot.

Specific periods of the year when the visit may be realized (should be defined in direct contact):

There is no time restriction, but it is required that the slot is arranged with enough anticipation (at least 6 months in advance).

Contact address for requesting details by the applicant: Pr. Marius Ilié, Laboratoire de Pathologie Clinique et Expérimentale, Hôpital Pasteur, Bâtiment J, 30 Voie Romaine, 06000 Nice, France ; email : ilie.m@chu-nice.fr

Accommodation & Documents:

After completion of the training period the trainee will receive a detailed certificate describing the work. A letter of invitation for the applicant can be issued if necessary.

No fee will be raised for the training program. The Department will not fund the accommodation or any fees incurred in visa applications, if required.

Basic knowledge of French is required.

Attachments:

Publications of the last 3 years

Recent Publications

[Genomic landscape of stage 0-IA lung adenocarcinoma identified by on-site reflex targeted NGS.](#)

Ilié M, Heeke S, Rignol G, Pirlog R, Goffinet S, Long-Mira E, Lassalle S, Lespinet-Fabre V, Bordone O, Tanga V, Lacoux C, Bonnetaud C, Benzaquen J, Boutros J, Cohen C, Gomez-Caro A, Marquette CH, Berthet JP, Hofman V, Hofman P. Lung Cancer. 2026 Mar;213:108943. doi: 10.1016/j.lungcan.2026.108943. Epub 2026 Jan 29. PMID: 41671632

[LINC01116, a hypoxia-lncRNA marker of pathological lymphangiogenesis and poor prognosis in lung adenocarcinoma.](#)

Gautier-Isola M, Lopes Goncalves R, Truchi M, Lacoux C, Scribe C, Cadis H, Guardini L, Bekisz S, Ilié M, Hofman P, Vassaux G, Mari B, Rezzonico R. Mol Oncol. 2026 Apr;20(4):962-980. doi: 10.1002/1878-0261.70175. Epub 2025 Dec 9. PMID: 41367062 Free PMC article.

[Perspectives in educating molecular pathologists on liquid biopsy: Toward integrative, equitable, and decentralized precision oncology.](#)

Ilié M, Malapelle U, Alix-Panabières C, Andersen CL, Chlebowski S, Lake V, Lacoux C, Lespinet-Fabre V, Bordone O, Heeke S, Bontoux C, Heitzer E, Pantel K, Hofman P. Mol Oncol. 2026 Apr;20(4):894-903. doi: 10.1002/1878-0261.70163. Epub 2025 Nov 14. PMID: 41235697 Free PMC article. Review.

[The lung cancer-associated blood biomarker hPG₈₀ exhibits a reversible increase in response to smoking in asymptomatic individuals.](#)

Vire B, Payen L, Vignault C, Hofman V, Marquette CH, Berthet JP, Boutros J, Ilie M, Penaranda G, Pourquier P, Mimoun N, Joubert D, Prieur A, Hofman P. Biomark Res. 2025 Nov 13;13(1):148. doi: 10.1186/s40364-025-00861-4. PMID: 41233929 Free PMC article.

[Detecting actionable mutations from matched plasma-based versus tissue next-generation sequencing in advanced non-small cell lung cancer: a retrospective single centre analysis on site.](#)

Bontoux C, Lacoux C, Benzaquen J, Boutros J, Rignol G, Long-Mira E, Lassalle S, Allegra M, Bohly D, Garcia M, Bonnetaud C, Bordone O, Félix JM, Lespinet-Fabre V, Tanga V, Marquette CH, Taly V, Baurès A, Heeke S, Ilié M, Hofman V, Hofman P. J Exp Clin Cancer Res. 2025 Aug 6;44(1):229. doi: 10.1186/s13046-025-03480-x. PMID: 40765058 Free PMC article.

[Computer-aided tumor cell fraction \(TCF\) estimation by medical students, residents, and pathologists improves inter-observer agreement while highlighting the risk of automation bias.](#)

Frei AL, Khan A, Oberson R, Reinhard S, Banz Y, Meeuwssen F, Janowczyk A, Grobholz R, Dawson HE, Lugli A, Ilié M, van der Laak J, Zlobec I. Virchows Arch. 2025 Jul 4. doi: 10.1007/s00428-025-04163-w. Online ahead of print. PMID: 40610733 Free article.

[Single-center experience using reflex-targeted next-generation sequencing at diagnosis of squamous cell lung carcinoma in daily practice.](#)

Pirlog R, Hofman V, Goffinet S, Bontoux C, Lespinet V, Rignol G, Bordone O, Lacoux C, Tanga V, Bonnetaud C, Lassalle S, Long-Mira E, Lim D, Berthet JP, Benzaquen J, Boutros J, Marquette C, Heeke S, Ilié M, Hofman P. Virchows Arch. 2026 Apr;488(4):841-852. doi: 10.1007/s00428-025-04147-w. Epub 2025 Jul 3. PMID: 40608133

[Exploring the Expression of CD73 in Lung Adenocarcinoma with *EGFR* Genomic Alterations.](#)

Long-Mira E, Bontoux C, Rignol G, Hofman V, Lassalle S, Benzaquen J, Boutros J, Lalvée-Moret S, Zahaf K, Lespinet-Fabre V, Bordone O, Maistre S, Bonnetaud C,

Cohen C, Berthet JP, Marquette CH, Vouret-Craviari V, Ilié M, Hofman P. *Cancers* (Basel). 2025 Mar 20;17(6):1034. doi: 10.3390/cancers17061034. PMID: 40149368 Free PMC article.

[Experts Speak Forum: Decarbonization for Green Biobanking-The Current Landscape and Challenges for the Future.](#)

Furuta K, Vu H, Adamek D, Ahmadi A, Baudry J, Fachiroh J, Fleshner N, Grossman GH, Hofman P, Ilie M, Kozlakidis Z, Yadav BK, Long-Mira E, Menon V, Ng W, Organick L, Pang SHM, Rastegar N, Shirakashi R, Sildva T, Wagner H, Furuta K. *Biopreserv Biobank*. 2025 Apr;23(2):71-78. doi: 10.1089/bio.2024.0128. Epub 2025 Mar 20. PMID: 40107768

[Preoperative liquid biopsy for EGFR-mutated detection at diagnostic in early-stage non-small cell lung cancer: real-world experience of a single centre.](#)

Bontoux C, Benzaquen J, Taly V, Baurès A, Allegra M, Lacoux C, Tanga V, Rignol G, Berthet JP, Marquette CH, Lespinet-Fabre V, Bordone O, Goffinet S, Ilie M, Hofman V, Hofman P. *J Clin Pathol*. 2025 Jul 18;78(8):578-580. doi: 10.1136/jcp-2024-209941. PMID: 40101941 No abstract available.

[Artificial intelligence for diagnosis and predictive biomarkers in Non-Small cell lung cancer Patients: New promises but also new hurdles for the pathologist.](#)

Hofman P, Ourailidis I, Romanovsky E, Ilié M, Budczies J, Stenzinger A. *Lung Cancer*. 2025 Feb;200:108110. doi: 10.1016/j.lungcan.2025.108110. Epub 2025 Jan 27. PMID: 39879785 Review.

[EGFR status assessment using reflex testing targeted next-generation sequencing for resected non-squamous non-small cell lung cancer.](#)

Goffinet S, Bontoux C, Heeke S, Pezzuto F, Ilié M, Long-Mira E, Lassalle S, Bordone O, Lespinet V, Allégra M, Tanga V, Bonnetaud C, Garnier G, Benzaquen J, Cohen C, Ferrari V, Marquette C, Berthet JP, Calabrese F, Hofman P, Hofman V. *Virchows Arch*. 2025 Mar;486(3):531-539. doi: 10.1007/s00428-024-04010-4. Epub 2024 Dec 31. PMID: 39741211

[Standardization through education of molecular pathology: a spotlight on the European Masters in Molecular Pathology.](#)

Ilié M, Lake V, de Alava E, Bonin S, Chlebowski S, Delort A, Dequeker E, Al-Dieri R, Diepstra A, Carpén O, Eloy C, Fassina A, Fend F, Fernandez PL, Gorkiewicz G, Heeke S, Henrique R, Hoefler G, Huertas P, Hummel M, Kashofer K, van der Laak J, de Pablos RM, Schmitt F, Schuurin E, Stanta G, Timens W, Westphalen B, Hofman P. *Virchows Arch*. 2024 Nov;485(5):761-775. doi: 10.1007/s00428-024-03933-2. Epub 2024 Oct 2. PMID: 39354109 Review.

[Reproducibility of c-Met Immunohistochemical Scoring \(Clone SP44\) for Non-Small Cell Lung Cancer Using Conventional Light Microscopy and Whole Slide Imaging.](#)

Bontoux C, Hofman V, Chamorey E, Schiappa R, Lassalle S, Long-Mira E, Zahaf K, Lalvée S, Fayada J, Bonnetaud C, Goffinet S, Ilié M, Hofman P. *Am J Surg Pathol*. 2024 Sep 1;48(9):1072-1081. doi: 10.1097/PAS.0000000000002274. Epub 2024 Jul 8. PMID: 38980727

[Navigating Change in Tumor Naming: Exploring the Complexities and Considerations of Shifting Toward Molecular Classifications.](#)

Ilié M, Heeke S, Horgan D, Hofman P. *J Clin Oncol*. 2024 Sep 20;42(27):3183-3186. doi: 10.1200/JCO.24.00323. Epub 2024 Jun 27. PMID: 38935877

[Plasmatic Inactive IL-18 Predicts a Worse Overall Survival for Advanced Non-Small-Cell Lung Cancer with Early Metabolic Progression after Immunotherapy Initiation.](#)

Janho Dit Hreich S, Humbert O, Pacé-Loscos T, Schiappa R, Juhel T, Ilié M, Ferrari V, Benzaquen J, Hofman P, Vouret-Craviari V. *Cancers* (Basel). 2024 Jun 14;16(12):2226. doi: 10.3390/cancers16122226. PMID: 38927931 Free PMC article.

[Shifting from Immunohistochemistry to Screen for *ALK* Rearrangements: Real-World Experience in a Large Single-Center Cohort of Patients with Non-Small-Cell Lung Cancer.](#)

Ilié M, Goffinet S, Rignol G, Lespinet-Fabre V, Lalvée S, Bordone O, Zahaf K, Bonnetaud C, Washetine K, Lassalle S, Long-Mira E, Heeke S, Hofman V, Hofman P. *Cancers (Basel)*. 2024 Jun 14;16(12):2219. doi: 10.3390/cancers16122219. PMID: 38927925 Free PMC article.

[Further knowledge and developments in resistance mechanisms to immune checkpoint inhibitors.](#)

Berland L, Gabr Z, Chang M, Ilie M, Hofman V, Rignol G, Ghiringhelli F, Mograbi B, Rashidian M, Hofman P. *Front Immunol*. 2024 Jun 5;15:1384121. doi: 10.3389/fimmu.2024.1384121. eCollection 2024. PMID: 38903504 Free PMC article. Review.

[WhARIO: whole-slide-image-based survival analysis for patients treated with immunotherapy.](#)

Tourniaire P, Ilie M, Mazières J, Vigier A, Ghiringhelli F, Piton N, Sabourin JC, Bibeau F, Hofman P, Ayache N, Delingette H. *J Med Imaging (Bellingham)*. 2024 May;11(3):037502. doi: 10.1117/1.JMI.11.3.037502. Epub 2024 May 11. PMID: 38737491 Free PMC article.

[Impact of indocyanine green on prolonged air leak in minimally invasive segmentectomy.](#)

Rudondy Q, Frey S, Bentellis I, Benkirane T, Cohen C, Benzaquen J, Ilie M, Gomez-Caro A, Berthet JP. *Thorac Cancer*. 2024 Apr;15(12):994-1006. doi: 10.1111/1759-7714.15274. Epub 2024 Mar 18. PMID: 38494909 Free PMC article.