



Nîmes – France, March 15-21, 2027

EUROPEAN CYTOGENETICISTS ASSOCIATION (E.C.A.)

European Diploma in Classical and Molecular Cytogenetics

Director: Professor Jean-Michel Dupont, Paris - France

<http://www.biologia.uniba.it/SEC/>

The Course is designed to provide advanced training in constitutional, haematological, and oncological cytogenetics to medical graduates, pharmacists, pathologists, biologists, health professionals and researchers, with an academic qualification. It is taught by about 20 leaders from major cytogenomics groups involved in research and applications across Europe who will train the students to identify genetic abnormalities for diagnosis and prognosis, and for fundamental and applied research using both classical and molecular cytogenetic techniques. The course, co-organized by E.C.A. and two French Universities, was started by Professor Jean Paul Bureau in 1997, and has been held in Nîmes under his directorship until 2017.

Registration

You can select either

(September 2026 – January 31, 2027)

- Basic diploma: only the lectures and a final online examination (no previous experience required)
- Advanced diploma: lectures + 2 months training in a cytogenetic laboratory (6 months experience in cytogenetics required), and onsite final examination (written and oral) in Paris

For registration, please send a letter of application with your CV to the organizers, Prof. Jean-Michel DUPONT (jean-michel.dupont@aphp.fr) or to Prof. Franck PELLESTOR (f-pellestor@chu-montpellier.fr).

2026 Registration fee may be adjusted: €1034 if paid by the participant, 2034€ if paid by an institution

Beware: the fee does not include accommodation during the lectures or the training

Accommodation

A **special** price is available for participants in the 4* Vatel hotel close to the course venue

(<https://www.hotelvatel.fr/en/nimes>). We highly recommend that all participants stay in this hotel where all the lecturers will be hosted in order to promote interactions during the course.

Scholarships

E.C.A. will award three scholarships covering the registration and accommodation fees. The Education Committee of the E.C.A. will select the suitable candidates.

Students whose registration is paid by a third party institution are not eligible for a scholarship

Topics

Technical Aspects: *Classical Cytogenetics*: Cell culture techniques; Chromosome staining methods (Q-, G-, C-, R-banding); *Molecular Cytogenetics*: Methods and principles of Fluorescence In Situ Hybridization (FISH); CGHarray and SNParray; Application of Massively Parallel Sequencing to Cytogenetics; Optical Genome Mapping; Databases in Cytogenetics; *Laboratory quality assessment*.

Clinical cytogenetics: *Basics*: Frequency of chromosome disorders; Cell cycle, mitosis and meiosis, gametogenesis; Heterochromatic and euchromatic variants; Numerical chromosome abnormalities; Structural abnormalities: translocations, inversions, insertions, deletions, rings, markers; Risk assessment for balanced abnormalities; X inactivation; numerical and structural abnormalities of the X and the Y; Mosaicism; Chimaeras; ISCN 2024; *Clinical*: Phenotype of common autosomal and sex chromosome aneuploidies; Chromosome abnormalities in recurrent abortions; Cytogenetics and infertility; Microdeletion syndromes; Uniparental disomy and its consequences; Genomic imprinting; Genetic counselling and ethical issues in cytogenetics; *Prenatal diagnosis*: Indications, methods and interpretation; Risk assessment for chromosomal abnormalities; Non-invasive methods using foetal nucleic acids in maternal blood; Pre-implantation diagnosis; *Cancer Cytogenetics*: Molecular approach to cancer cytogenetics; Predisposition to cancer, Chromosome instability syndromes; Chromosome mutagenesis; Solid tumors; Clinical application in onco-haematology.

Other topics: Genome architecture; Structure of chromatin; Structure of metaphase chromosomes; Mechanisms of chromosome aberrations; Origin of aneuploidy; Evolution and plasticity of the human genome; Animal cytogenetics; Plant cytogenetics.