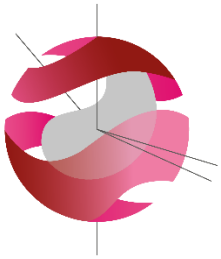

ESCCA
European Society
for Clinical Cell Analysis

EUROPEAN CERTIFICATE FOR CYTOMETRY SPECIALISTS -

HEMATO-ONCOLOGY

GUIDELINES AND SUGGESTED EDUCATIONAL RESOURCES

www.escca.eu

ESCCA EUROPEAN CERTIFICATE FOR CYTOMETRY SPECIALISTS – HEMATO-ONCOLOGY: GUIDELINES AND RESOURCES

1. BACKGROUND

The European Society for Clinical Cell Analysis (ESCCA) is committed to promote high quality education in Cytometry. Since its foundation more than 10 years ago, ESCCA has fostered its own ongoing Educational Program, coordinated by the Education and Accreditation Committee. In addition, ESCCA collaborates with other institutions in the diffusion of educational activities of relevance in Cytometry and related fields.

The ESCCA Education and Accreditation Committee is aware of the technical complexity and constant evolution of cytometry instrumentation and its applications, requiring continuous training and education. These issues have been covered traditionally by the Education Activities incorporated in the ESCCA Conferences and, more recently, by the ESCCA International and Local Schools on Cytometry.

The final goal of the educational efforts of ESCCA is to help ESCCA members, and especially the young ones, to attain excellence in their work in cytometry, be it in the clinical or in the basic fields. In order to attest the level of excellence of cytometrists, as evidenced by their knowledge and abilities, the ESCCA Education and Accreditation Committee has created the European Cytometry Certificate.

Each year, the ESCCA Board will award the best performing candidate who achieved a score of 90% or higher for the examination. The awardee will receive **an outstanding achievement recognition and a free registration** for the upcoming ESCCA Conference.

2. THE EUROPEAN CYTOMETRY CERTIFICATE

The European Cytometry Certificate has the following levels of certification:

- **The European Certificate for Cytometry Operators:**

This first level of certification may be attained after evaluation of the candidate' s knowledge about basic flow cytometry as described in ESCCA Certificate Guidelines for Cytometry Operators. Applicants should demonstrate a minimum of three years of experience in cytometry. The first level of ESCCA Certificate Examination is available online and open for applications.

- **The European Certificate for Cytometry Specialists - Hemato-oncology:**

This second level of certification may be attained after evaluation of skills and knowledge of the candidate about clinical flow cytometry-hemato-oncology. Eligible candidates should meet the following requirements:

a. Baccalaureate and/or Master degree and/or Doctorate from an accredited/approved educational institution in biological/life science, physics, engineering or an appropriately related field;
b. Minimum of three years acceptable laboratory experience in cytometry (clinical, research, industry or veterinary) in a laboratory accredited under ISO 15189, by JCI, CAP or authorized by a governing regulatory association or Ministry.

Certification consists of a written examination, analysis/interpretation of practical cases and revision of the candidate's CV by the ESCCA Education and Accreditation Committee.

3. THE EUROPEAN CERTIFICATE FOR CYTOMETRY SPECIALISTS – HEMATO-ONCOLOGY: RULES

1. The European Certificate for Cytometry Specialists - Hemato-oncology is available for ESCCA members only.
2. The examination language is English.
3. The fee for the examination and certification is € 100 (members) or € 250 (non-members, including a 1 year- ESCCA membership).
4. Eligible candidates should demonstrate a minimum of three years acceptable laboratory experience in clinical cytometry in an accredited/approved laboratory under ISO 15189, by JCI, CAP or authorized by a governing regulatory association or Ministry. A CV and an official attestation of the number of years of experience, issued by the director of the employing facility or other entitled authority should be uploaded in the online registration form.
5. The examination consists of 100 multiple choice questions, analysis/interpretation of 3 practical cases and will last two hours.
6. The examination will be considered as passed if at least 60 questions are correctly answered including the practical cases.
7. The contents of the examination and examples of questions are described later in this document.
8. Candidates who successfully pass the examination will receive a certificate stating their status and will be enlisted in a special page in the ESCCA website site and, when convenient, in the site of the ESCCA-affiliated society.
9. Certification will expire after three years.

10. Reinstatement of certification before the date of expiration is free of charge upon proof of continuous education and practice in flow cytometry from an approved educational institution or other entitled authority. The proof should be addressed to the ESCCA Exam Committee and emailed to membership@escca.eu
11. For reinstatement of certification after the date of expiration but no more than 5 years, submission of an application for certificate reinstatement and a completed declaration form documenting all continuing education earned within the previous years is required. The reinstatement fee is 50 euros, for which an invoice will be sent. Reinstatement will take affect after receipt of the amount due.
12. Reinstatement of expired certificate for more than 5 years is not possible. In such cases individuals will be required to retake and pass the certification examination in order to reinstate their certification.

4. THE EUROPEAN CERTIFICATE FOR CYTOMETRY SPECIALISTS - HEMATO-ONCOLOGY: PRACTICAL ASPECTS

1. The examination for the European Certificate for Cytometry Specialists will be proceeded online through the Moodle platform of the ESCCA website anytime during the year, except during public holidays.
2. The application process is as follows:
   - The candidate should apply for the examination via the ESCCA membership section by completing the online registration form in the section 'ESCCA Certification Exam'.
   - A CV and an official attestation of the number of years of experience of the candidate, issued by the director of the employing facility or other entitled authority, should be uploaded in the online registration form.
   - The exam can take place from Monday - Friday between 09.00 - 16.00 hrs. CET. All international public holidays are excluded.
     Two dates must be selected in the registration form: the preferred date and a back-up date. The exam can take place from 1 month after the submission of the application. Confirmation of the date is subject to the availability of the exam supervisors. The final date will be confirmed in the notification of acceptance.
   - The registration fee of €100 (members) or € 250 (non-members) can be paid by iDeal (Dutch candidates only) or credit card.
   - After submission of the registration your application will be reviewed by the Exam Committee. The candidate will receive a notification of acceptance or rejection by email within 2 weeks after submission of the registration form.
   - In case the application is rejected, the registration fee will be reimbursed.
   - If a candidate fails the exam, the registration fee cannot be reimbursed.

5. THE EUROPEAN CERTIFICATE FOR CYTOMETRY SPECIALISTS - HEMATO-ONCOLOGY: GUIDELINES

A. Examination content areas:

1. Myeloproliferative neoplasms
2. Myeloid/lymphoid neoplasms with eosinophilia and rearrangement of PDGFRA, PDGFRB, or FGFR1, or with PCM1-JAK2
3. Myelodysplastic/myeloproliferative neoplasms
4. Myelodysplastic syndrome
5. Acute myeloid leukaemia and related disease
6. Blastic plasmacytoid dendritic cell neoplasm
7. Acute leukemias of ambiguous lineage
8. B-lymphoblastic leukemia/lymphoma
9. T-lymphoblastic leukemia/lymphoma
10. Mature B-cell lymphoid neoplasms
11. Mature T- and NK- cell neoplasms
12. Hodgkin lymphoma
13. Posttransplant lymphoproliferative disorder
14. Histiocytic and dendritic cell neoplasms
15. Inherited and acquired red blood cell disorders
16. Inherited and acquired platelet disorders
17. Inherited and acquired disorders of the complement system

B. Examples of questions

Most of the T-LGL (T-cell Large Granular Leukemia) with CD4+ CD8± CD56+ phenotype and Vbeta 13.3 restriction display a TCR specific for:

a. EBV

b. CMV

c. HHV6

d. HHV8

The phenotype expected in T-cell large granular lymphocytic leukemia (T-LGL) is:

a. CD2+, CD3+, CD4-, CD5+, CD8+, CD57+

b. CD2+, CD3+, CD4-, CD5-, CD8-, CD57+

c. CD2+, CD3+, CD4+, CD5+, CD8±, CD57+

d. All the previous ones

The target of the therapeutic MoAb Daratumumab is the following antigen:
a. CD20
b. CD38
c. SLAMF7/CD319
d. CD138

6. SUGGESTED BIBLIOGRAPHY AND RESOURCES AVAILABLE IN THE INTERNET

A. ESCCA COURSES educational materials

These are available in the membership section under 'Courses'

B. JOURNALS

- Clinical Cytometry part B, Clinical Cytometry
- International Journal of Laboratory Hematology
- Leukemia
- Blood

C. BOOKS

Clinical Flow Cytometry: Principles & Application. K.D. Bauer, R.E. Duque,T. V. Shankey, editors. Williams & Wilkins, Baltimore, 1993

Diagnostic Applications of Cytofluorimetric Methods Using Monoclonal Antibodies. B. Brando, J.E. O'Connor, editors. European School of Transfusion Medicine, 1994

Flow Cytometry and Clinical Diagnosis. D. F. Keren, C. A. Hanson, P. E. Hurtubise, eds. American Society of Clinical Pathologists Press, Chicago, 1994

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Immunophenotyping. C.C. Stewart, J.K.A. Nicholson, editors. John Wiley & Sons, 2000

Flow Cytometry: A Practical Approach. Michael Ormerod. Oxford University Press. 2000

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Flow Cytometry in Hematopathology: A Visual Approach to Data Analysis and Interpretation. DT Nguyen, LT Diamond, RC Braylan. Springer, 2007

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Flow Cytometry of Hematological Malignancies. C Ortolani. Wiley-Blackwell, 2011

Practical Flow Cytometry in Haematology Diagnosis. M Leach, M Drummond, A Doig. Wiley-Blackwell, 2013

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