

# ESOT Masterclass

## From Liquid Biopsy to Tissue Gene Expression: The Impact of New Technologies on Clinical Practice in Solid Organ Transplantation (SOT)

Date: 14 – 15 June, 2024

**Location: Mercure Hotel Stare Miasto  
Krakow, Poland**

Advancements in molecular biology technology allowed the development of promising biomarkers, such as Peripheral blood gene expression profiling (GEP) and cell-free DNA (cfDNA), for minimally invasive diagnosis and characterisation of allograft rejection.

The use of circulating GEP and cfDNA may offer advantages over invasive tissue biopsy as a quantitative measure for detection of transplant rejection, immunosuppression optimisation and follow-up after treatment. However, there is no standard recognition of the usage of this new technology.

With the intention of fostering awareness around this topic, during the TLJ 3.0 Consensus conference held in Prague, November 2022, a panel of experts developed guidelines on the use of Molecular Biology testing for Non-Invasive Diagnosis of Allograft Rejection pertaining to the [Kidney](#), Heart & Lung, and [Liver](#). These guidelines were submitted in the form of three papers and have been published on Transplant International.

This masterclass was designed based on the outcomes of these guidelines. It will cover all the cutting-edge technologies that are about to revolutionise the transplantation field, including cell-free DNA, new plasma, urinary and immune function biomarkers, gene-expression profiling, as well as recent advances on HLA and non-HLA antibodies.

### Learning Objectives:

After attending this masterclass participants will be able to:

- Gain insight into all the cutting-edge technologies in the transplantation field;
- Learning the ESOT recommendations on testing for non-invasive diagnosis of SOT rejection;
- Put recent discoveries into clinical context.

### Target Audience:

Solid Organ Transplant professionals, who are within 5 years of senior appointment.

Professional Background: Nephrology, Cardio Thoracic, Scientist, Allied Health Care Professionals

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*This project is possible thanks to the kind support of **CareDX** and **Eurofins***

#### ESOT Headquarters

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**Scientific Organisers:**

David Cucchiari (Spain)

Dilan Dabare (UK)

Luciano Potena (Italy)

**Faculty:**

Louise Benning (Germany)

Marta Jimenez Blanco-Bravo (Spain)

Eric Epailly (France)

Valentin Goutaudier (France)

Delphine Kervella (Spain)

Carmen Lefaucheur (France)

Guido Moll (Germany)

Andriana Nikolova (US)

Bianca de Nicolo (Italy)

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## Preliminary Scientific Programme – 14 June 2024

### Session 1 Introduction of ESOT Guidelines on Biomarkers (14:30 – 16:00)

**Moderator:** Luciano Potena (Italy)

|       |  |        |                            |
|-------|--|--------|----------------------------|
| 14:30 | Welcome Address  | 5 min  | David Cucchiari (Spain)    |
| 14:35 | Overview of Biomarkers in Transplantation: What to expect?   | 25 min | Carmen Lefaucheur (France) |
| 15:00 | Guidelines Presentation: <b>Kidney</b><br><i>'European Society of Organ Transplantation Consensus Statement on Testing for Non-Invasive Diagnosis of Kidney Allograft Rejection'</i>                         | 20 min | Sook Hyeon Park (US)       |
| 15:20 | Guidelines Presentation: <b>Heart &amp; Lung</b><br><i>'European Society for Organ Transplantation Statement on the use of non-invasive biomarkers for cardiothoracic transplant rejection surveillance'</i> | 20 min | Andriana Nikolova (US)     |
| 15:40 | Discussion   | 20 min |                            |

### Coffee Break: 16:00 – 16:30

### Session 2 Donor derived cfDNA (16:30 – 18:00)

**Moderator:** Carmen Lefaucheur (France)

|       |   |        |   |
|-------|---|--------|---|
| 16:30 | Challenges of setting up of cfDNA assay | 25 min | Bianca de Nicolo (Italy)  |
| 16:55 | cfDNA in Kidneys & Pancreas             | 25 min | Louise Benning (Germany)  |
| 17:20 | cfDNA in Heart & Lung                   | 25 min | Luciano Potena (Italy)  |
| 17:45 | Panel Discussion                        | 15 min | Moderator: Carmen Lefaucheur (France)<br>Panellists: Bianca De Nicolo (Italy)<br>Luciano Potena (Italy)<br>Louise Benning (Germany) |

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## Preliminary Scientific Programme – 15 June 2024

### Session 3 Other Biomarkers (09:00 – 10:40)

**Moderator:** Eric Epailly (France)

|       |   |        |                                    |
|-------|---|--------|------------------------------------|
| 09:00 | Urinary                                   | 20 min | David Cucchiari (Spain)            |
| 09:20 | Gene expression                           | 20 min | Valentin Goutaudier (France)       |
| 09:40 | Cardiac biomarkers                        | 20 min | Marta Jimenez Blanco-Bravo (Spain) |
| 10:00 | Immune function biomarkers                | 20 min | Delphine Kervella (Spain)          |
| 10:20 | HLA and non-HLA donor specific antibodies | 20 min | Guido Moll (Germany)               |

**Coffee Break: 10:40 – 11:00**

### Session 4 Clinical Case Discussion (11:00 – 12:00)

**Format:** Participants will be divided into two groups. Clinical case studies will be presented and discussed.

|       |  |        |  |
|-------|--|--------|--|
| 11:00 | <b>Clinical case discussion:</b><br>Management of subclinical and of relapsing rejection in KTX: how biomarkers could be helpful | 25 min | Moderators: David Cucchiari (Spain)<br>Louise Benning (Germany)          |
| 11:25 | <b>Clinical case discussion:</b><br>Management of rejection treatment in infected patients: how biomarkers can be helpful        | 25 min | Moderators: Marta Jimenez Blanco-Bravo (Spain)<br>Luciano Potena (Italy) |
| 11:50 | Closing Remarks  | 10 min | David Cucchiari (Spain)<br>Luciano Potena (Italy)                        |

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