GDL AIBT 2024 – FCXM e Luminex

Raccolta dati: Silvia Giuliodori

Analisi Dati: Carla Cervelli, Silvia Giuliodori, Elvira Poggi

Responsabile Scientifico: Antonina Piazza

N° 14 Laboratori Partecipanti al GDL

Bari	donata.mininni@policlinico.ba.it
Bologna	silvia.manfroi@aosp.bo.it
Cagliari	sara.lai@aslcagliari.it
L'Aquila	critt@asl1abruzzo.it;fpapola@asl1abruzzo.it
Milano	elena.longhi@policlinico.mi.it
Napoli	direzione.immunoematologia@unicampania.it
Padova	mariapaola.albergoni@aopd.veneto.it
Palermo	v.cappuzzo@villasofia.it
Parma	giovanni.rombola@ao.pr.it; sGiuliodori@ao.pr.it
Pisa	m.curcio@ao-pisa.toscana.it
Reggio Calabria	laboratorio.hla@ospedalerc.it
Roma CRT	labcrtl@scamilloforlanini.rm.it; elvira.poggi@cnr.it
Roma OPBG	marco.andreani@opbg.net
Torino	cristiana.caorsi@unito.it

FCXM, CDCXM e anti-HLA Luminex (I)

- ✓ **Eseguiti sino ad ora 14 XM (con tecnica di FC e CDC) sui campioni del QC-ISS. In particolare:**
  - 2 cellule (A e B) testate con 4 sieri (302, 303, 304,305)
  - 2 cellule (C e D) testate con 3 sieri (306, 307, 308)
- ✓ **Lo studio dei sieri è stato effettuato mediante Luminex Single Antigen Beads Classe I e II (One Lambda e/o Immucor). In particolare si evidenzia:**
  - Siero 304 negativo per la presenza di anti-HLA sia di classe I che II;
  - Sieri 303 e 307 (sieri molto forti) hanno determinato FCXM e CDCXM positivi sia T che B

FCXM, CDCXM e anti-HLA Luminex (II)

XM Cellula A-Siero 302
CDC: T Neg/B Pos (1 Lab: T Pos/B Pos)
FC: T Pos/B Pos (per tutti)

Luminex SAB-Siero 302: Anti-HLA specifici per cell. A:
A*26:01 (OL >20.000, IMM ~17.000)
DQB1*03:01 (OL >20.000, IMM >20.000)

FCXM, CDCXM e anti-HLA Luminex (III)

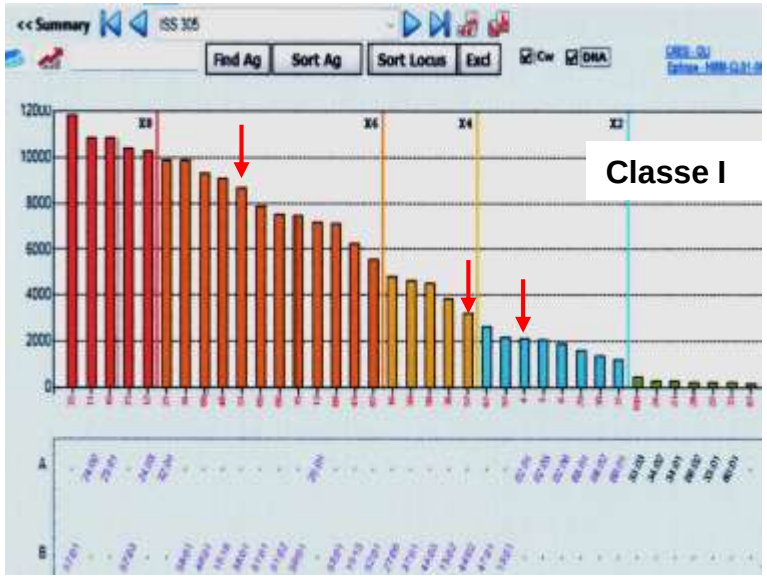
<u>XM Cellula B-Siero 302</u>
CDC: T ND/B Pos (9 Lab: Pos/Pos; <u>3 Lab: Neg/Pos</u>)
FC: T Pos/B Pos (per tutti)

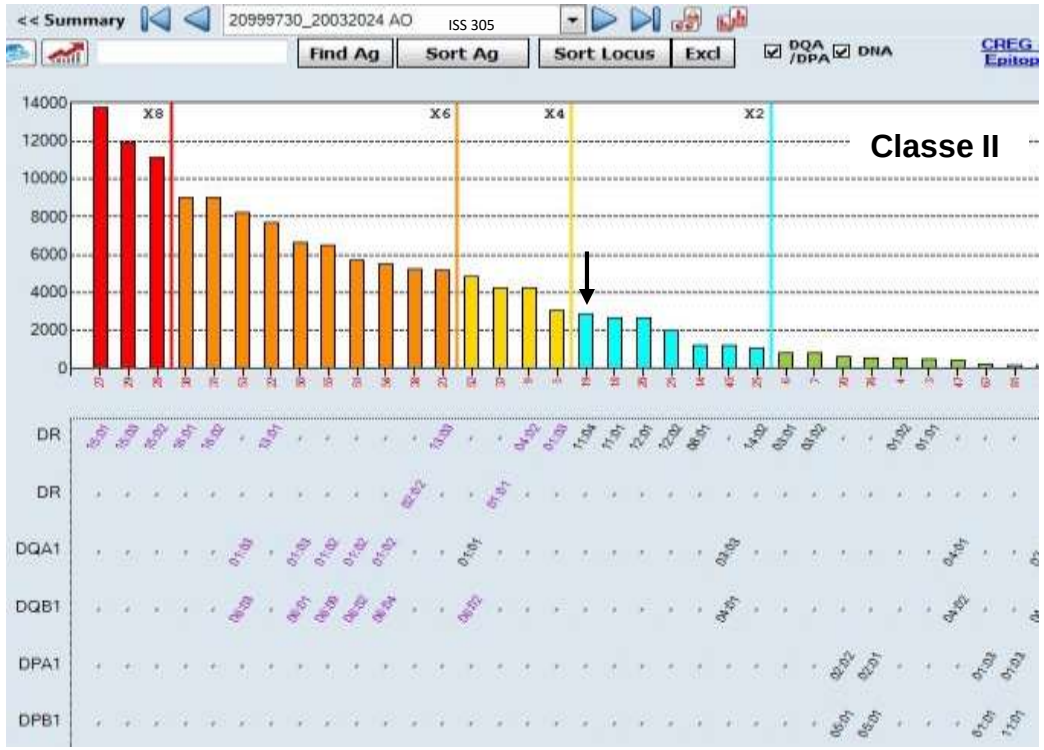
<u>Luminex SAB-Siero 302:</u>Anti-HLA specifici per cell. B
A*26:01 (OL >20.000, IMM ~17.000)
DRB1*07:01 (OL >20.000, IMM ~20.000)
DQB1*02:02 (OL >20.000, IMM ~20.000)

FCXM, CDCXM e anti-HLA Luminex *(IV)*

XM Cellula A-Siero 305
CDC: T Neg/B ND (9 Lab: Neg/Neg; 3 Lab:Neg/Pos)
FC: T Pos/B Pos (per tutti)

Luminex SAB-Siero 305: Anti-HLA specifici per cell. A:
A*02:01 (OL~2.000, IMM ~1.000)
B*38:01 (OL~9.000, IMM ~4.000)
B*44:02 (OL~3.000, IMM ~2.500)
DRB1*11:04 (OL~3.000, IMM~4.000)

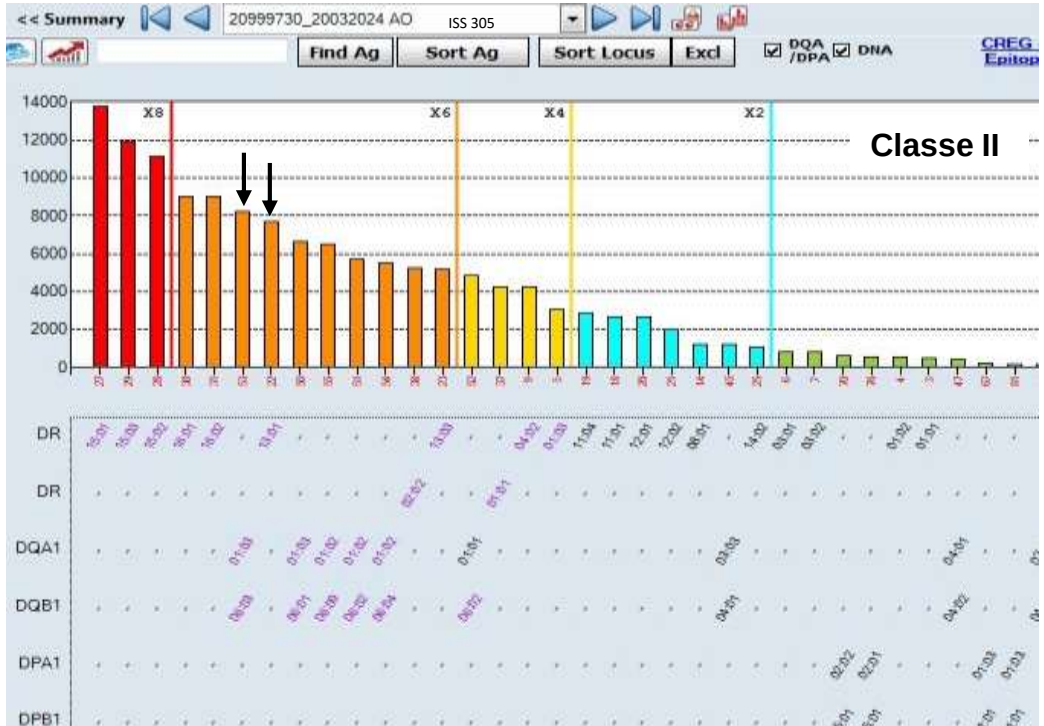




FCXM, CDCXM e anti-HLA Luminex (V)

XM Cellula B-Siero 305
CDC: T Neg/B Neg (1 Lab: Neg/Pos)
FC: T Pos/B Pos (1 Lab Neg/Pos)

Luminex SAB-Siero 305: Anti-HLA specifici per cell. B:
B*51:01 (OL~8.000, IMM ~4.000)
DRB1*13:01 (OL~10.000, IMM ~6.000)
DQA1*01:03 (OL~10.000, IMM ~8.000) (copre DQB1*06:03)



FCXM, CDCXM e anti-HLA Luminex (VI)

<u>XM Cellula C-Siero 306</u>
CDC: T Neg/B Neg (<u>1 Lab: Neg/Pos</u>)
FC: T Neg/B Pos (per tutti)

<u>Luminex SAB-Siero 306:</u> Anti-HLA specifici per cell. C:
DRB1*07:01 (OL~18.000, IMM ~12.000)
DQB1*02:02 (OL~2.500, IMM ~1.000)
DPB1*14:01 (OL~1.800, IMM <1.000)

FCXM, CDCXM e anti-HLA Luminex (VII)

<u>XM Cellula D-Siero 306</u>
CDC: T Neg/B Pos (<u>4 Lab: Pos/Pos</u>)
FC: T Pos/B Pos (per tutti)

<u>Luminex SAB-Siero 306:</u> Anti-HLA specifici per cell. D:
B*13:02 (OL~18.000, IMM ~6.000)
DRB1*07:01 (OL~18.000, IMM ~12.000)
DQB1*02:02 (OL~2.500, IMM ~1.000)
DPB1*14:01 (OL~1.800, IMM <1.000)

FCXM, CDCXM e anti-HLA Luminex (VIII)

XM Cellula C-Siero 308
CDC: T Neg/B Pos (2 Lab: Neg/Neg)
FC: T Pos/B Pos (per tutti)

Luminex SAB-Siero 308: Anti-HLA specifici per cell. C:
B*58:01 (OL~17.000, IMM ~10.000)
DRB1*07:01 (OL~17.000, IMM ~12.000)
DQB1*06:02 (OL~17.000, IMM ~7.000)

Human Immunology 79 (2018) 602–609

Improving the performance of virtual crossmatch results by correlating with nationally-performed physical crossmatches: Obtaining additional value from proficiency testing activities

Sean M. Wrenn[a*], Carlos E. Marroquin[a], Donna-Sue Hain[b], Sarah K. Harm[b], Jaime A. Pineda[a], Paulette B. Hammond[b], Diti H. Shah[b], Susan E. Hillyard[b,a], Mark K. Fung[b]

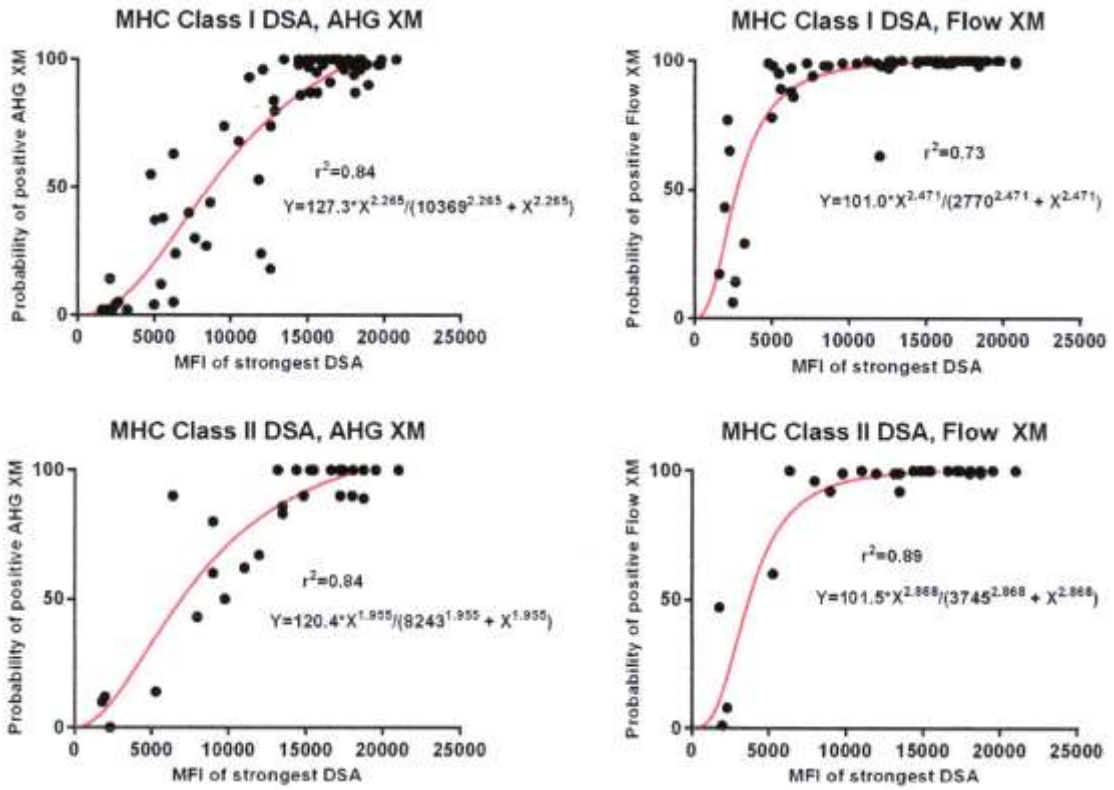
[a] University of Vermont Robert Larner, M.D. College of Medicine, Department of Transplant Surgery, Burlington, VT, United States
[b] University of Vermont Robert Larner, M.D. College of Medicine, Department of Pathology, Burlington, VT, United States

In this study we retrospectively reviewed reports from nationally distributed samples for HLA antibody testing and crossmatching (2011–2015, College of American Pathologists (CAP)) , and correlated our institutional HLA laboratory Luminex antibody results for strength of reactivity as MFI against the percentage of laboratories that were able to obtain a positive crossmatch by either the less sensitive cytotoxic method or the more sensitive flow cytometric method

Human Immunology 79 (2018) 602–609

We compared the probability of a positive XM when the top DSA was an HLA Class I (A, B, C) vs. Class II (DR, DQ) antigen.
The cut-off values for a "probably" positive XM were determined at the 50th percentile (y=50) for each regression equation.

Positive crossmatches by CDC-AHG and flow cytometric crossmatch methods were associated (50th percentile) with MFI of greater than 8554 and 2748 respectively for HLA class I, and 6919 and 3707 respectively for HLA class II



Human Immunology 79 (2018) 602–609

Cumulative MFI value of sample	Total number of samples (n)	Mean CAP % Direct XM Positive (SD)	Mean CAP % AHG XM Positive (SD)	Mean CAP % Flow XM Positive (SD)
0	43	2% (2.8)	3.3% (6.2)	8% (19.8)
1–3000	9	3.1% (2.0)	5.7% (5.1)	30.8% (28.5)
3001–8000	9	7.7% (6.5)	14.4% (15.0)	58.3% (19.8)
8001–15,000	26	34.7% (29.6)	60.7% (27.5)	93.9% (8.3)
15,001–20,000	48	84.75% (21.2)	91.9% (14.8)	99.5% (1.0)
20,001–30,000	27	85.5% (24.3)	93.6% (17.4)	99.7% (0.7)
30,001–40,000	11	93.6% (7.5)	98.5% (2.8)	100% (0.0)
40,001 and above	7	96.9% (2.2)	92.9% (10.3)	99.9% (0.3)
Total	180	50.9% (42.8)	58.7% (42.8)	72.1% (41.2)

MFI values exhibited a direct correlation with probability of a direct XM.