MasterClass in Bladder Cancer 2026

Danae Urogenomics: from unmet clinical need to urine-based precision medicine

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Organized by:
HENDERE HEALTHCARE
#BladderMasterClass26
Hospital Universitario 12 de Octubre
SaludMadrid

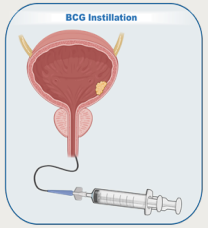
Bladder cancer follow-up is still invasive, costly and imperfect

Bladder cancer social and sanitary challenges

Recurrence rate of 70%

Follow-up of 5 - 10 years (2-4 times per year)

Most expensive cancer disease per patient for the health system

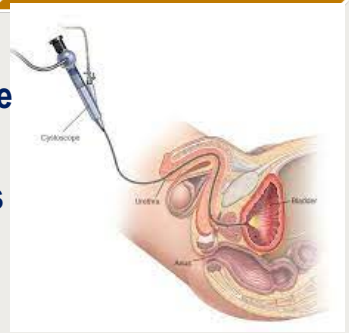


BCG problems

- 50-60% effectiveness
- Painful & longtime treatment.
- 27 Weekly instillations
- New therapy approval AFTER BCG failure

Diagnosis → TURBT → Treatment → Monitoring → Outcome

- Highly Invasive
- Expensive.
- Operator skills dependent



GOLD STANDARD= CYSTOSCOPY

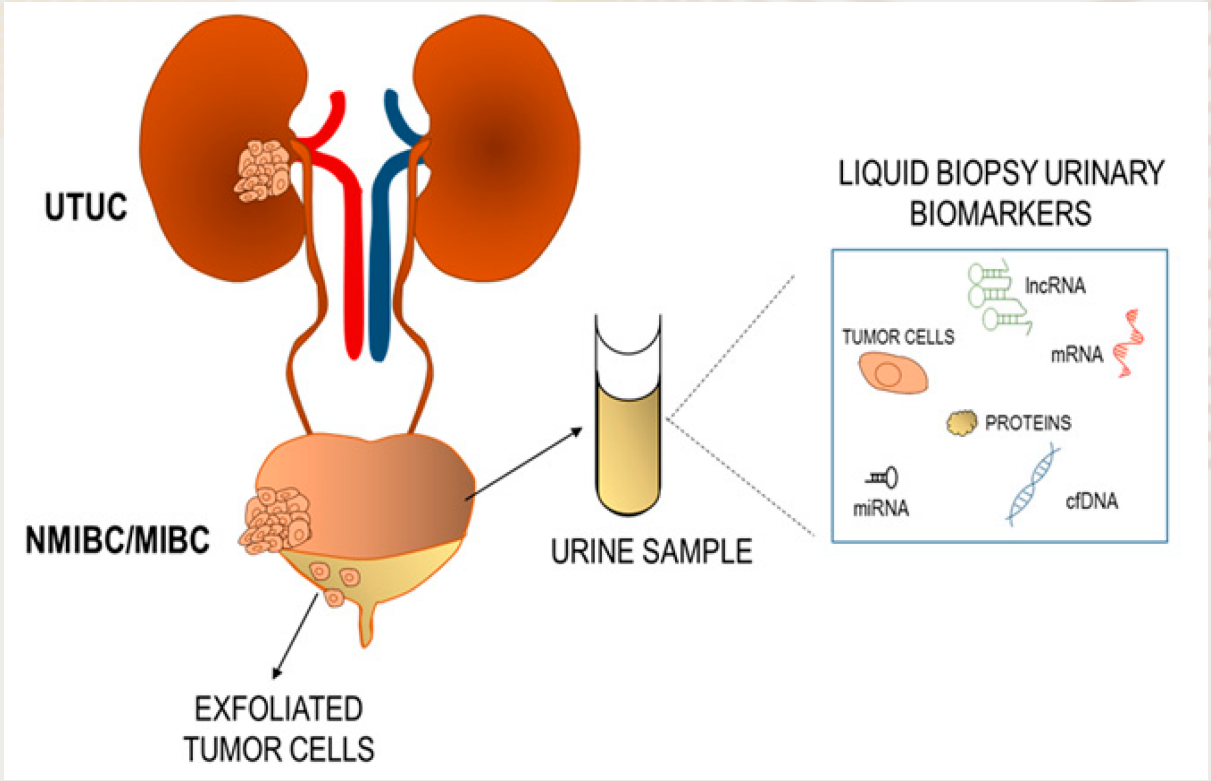
Where can urine biomarkers change the patient journey?

- ✓ **Detection**
- ✓ **Monitoring**
- ✓ **Treatment response prediction**

The question is not only whether we can detect cancer. The real clinical value is where we can help urologists make better decisions

Why urine in bladder cancer?

Urine is not a surrogate sample — it is the natural liquid biopsy for bladder cancer



- ✓ Direct contact with urothelial tumors.
- ✓ Non-invasive, repeatable, scalable.
- ✓ Suitable for longitudinal monitoring.

It is biologically close to the disease and can be repeatedly collected without adding burden to patients.

BlaDimiR: the Platform

A non-invasive molecular diagnostic platform that:

3 PRODUCTS. 3 UNMET NEEDS. 1 PLATFORM.

BlaDimiR DIAGNOSTIC

Diagnosis & Follow-up

- Replaces cytology. >90% accuracy.
- ~100% low-grade detection.
- Reduces 1–2 cystoscopies per patient per year.
- **Immediate reduction in hospital workload and costs**

BlaDimiR PLUS

BCG Response Prediction

- The world's best urine test predicting BCG treatment response.
- Protects patients from toxic, ineffective therapy.
- **Avoids toxicity, hospitalizations and wasted cost**

BlaDimiR IO®

Predicting response. Personalizing immuno-oncology

Immuno-oncology Selection

- Predicts immunotherapy response.
- Designed as a Companion Diagnostic (CDx): ***the gateway to major pharma partnerships.***

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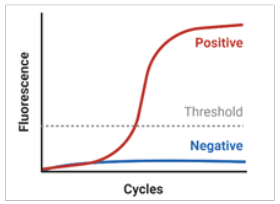
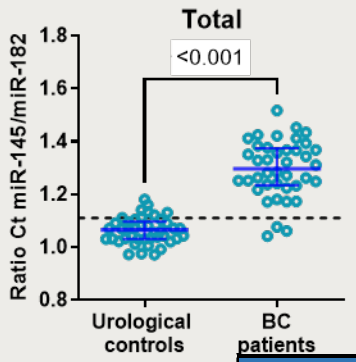
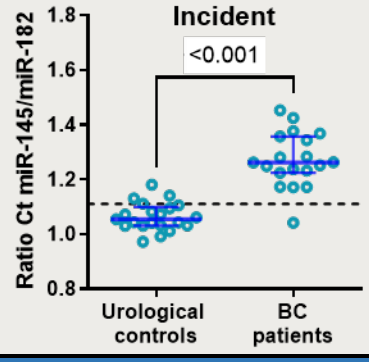
BlaDimiR detects bladder cancer in urine with high accuracy

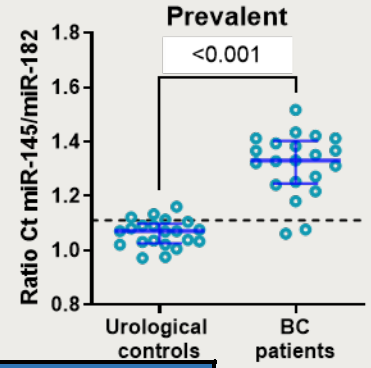
Cohort 3: Proof-of-concept cohort of urine samples (n = 143)			
Age	**Gender**	**Tumor Stage**	**Tumor Grade**
24 healthy donors			
61 (49-78)	M (n=20) F (n=4)		
119 BC patients			
64 (53-83)	M (n=93) F (n=26)	Ta (n=80) T1 (n=20)	HG (n=50) LG (n=69)

Cohort 4: Blinded validation cohort of urine samples (n = 82)			
Age	**Gender**	**Tumor Stage**	**Tumor Grade**
42 urological controls			
21 incidents and 21 prevalents			
69.5 (41-89)	M(n=31) F(n=11)		
40 BC patients			
19 incidents and 21 prevalents			
Age	**Gender**	**Tumor Stage**	**Tumor Grade**
72.50 (35-95)	M(n=36) F(n=4)	Ta (n=18) T1 (n=6) T2 (n=5) T4 (n=1) pTIS (n=2) Tx (n=7) NA (n=1)	HG (n=15) LG (n=22) NA (n=3)



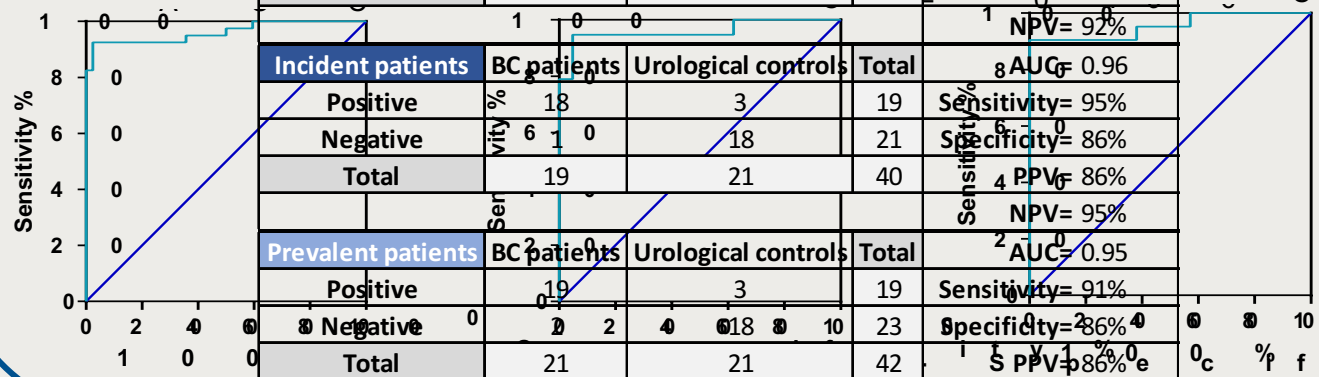






Urine validation cohort (cohort 4)				
Total cohort	**BC patients**	**Urological controls**	**Total**	AUC= 0.96
Positive	37	6	38	Sensitivity= 93%
Negative	3	36	44	Specificity= 86%
Total	40	42	82	PPV= 86%
				NPV= 92%
Incident patients	**BC patients**	**Urological controls**	**Total**	AUC= 0.96
Positive	18	3	19	Sensitivity= 95%
Negative	1	18	21	Specificity= 86%
Total	19	21	40	PPV= 86%
				NPV= 95%
Prevalent patients	**BC patients**	**Urological controls**	**Total**	AUC= 0.95
Positive	19	3	19	Sensitivity= 91%
Negative	2	18	23	Specificity= 86%
Total	21	21	42	PPV= 86%
				NPV= 90%

AUC = 0.96 AUC = 0.96 AUC = 0.95



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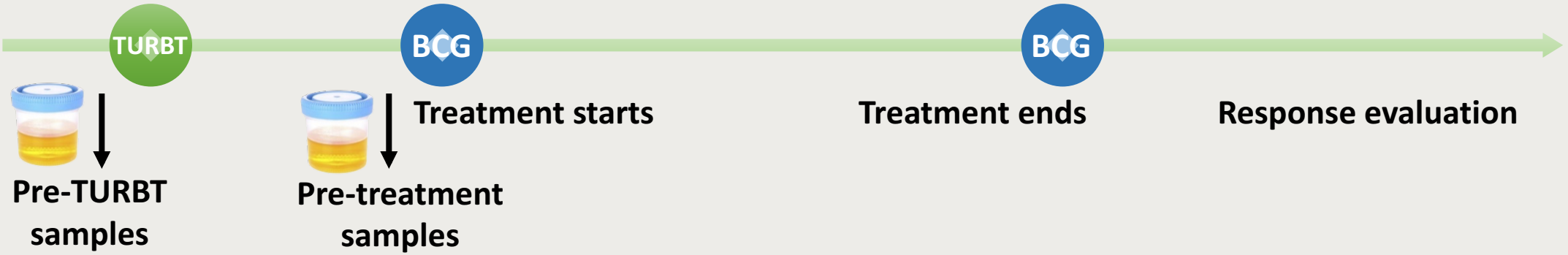
BlaDimiRplus: moving from treatment after failure to treatment stratification

Validation in urine (n = 143)



Individual miRNAs and ratios

Variable	AUC	Sensitivity (%)	Specificity (%)	*p* -value
miR-223-3p	0.71	87.5	70.0	0.131
miR-483-3p	0.79	62.5	90.0	0.041
miR-579-3p	0.83	75.0	90.0	0.021
miR-223-3p/miR-483-3p ratio	0.90	87.5	80.0	0.005
miR-223-3p/miR-579-3p ratio	0.90	100.0	80.0	0.005

Logistic regression analysis

Variable	β coefficient	SE β coefficient	*p* -value
miR-223-3p/miR-182-5p ratio	18.015	11.486	0.117
miR-223-3p/miR-483-3p ratio	-53.331	32.959	0.106
Constant	30.771		
AUC = 0.95; *p* -value = 0.0004			

TURBT → Pre-treatment urine sample → RT-qPCR → BCG response prediction → treatment decision

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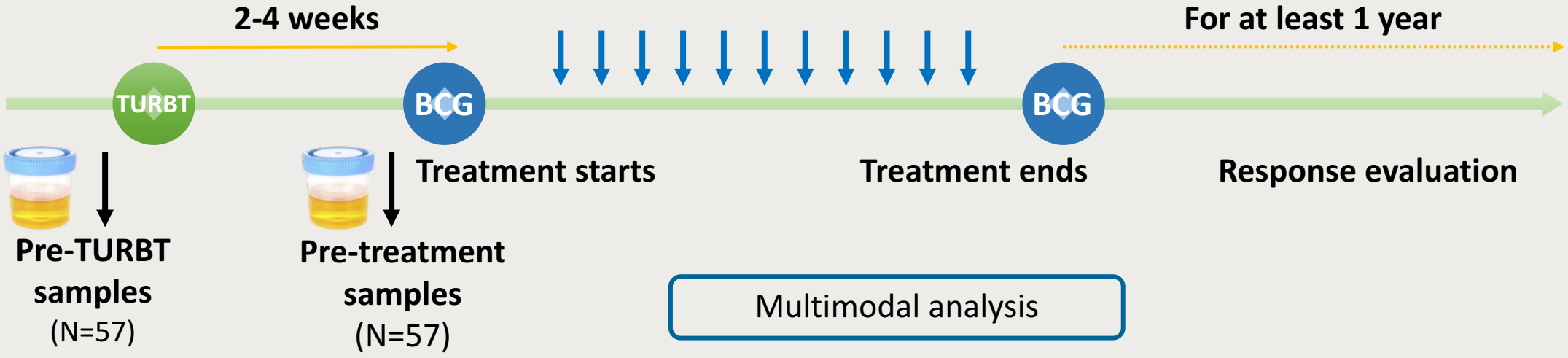
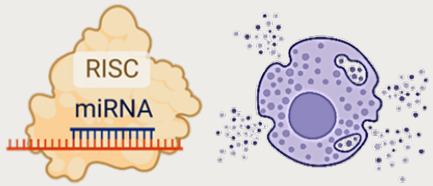
Beyond BCG: urine-based prediction of immunotherapy response



Multimodal analysis



Best combination of miRNAs and cyto/chemoquines on urine samples				
Combination	**Sample group**	**AUC**	**Sensitivity (%)**	**Specificity (%)**
CXCL10/IP-10 TGF-β1	Pre-RTU (combination BCG + anti-PD-L1)	1	100	100
miR21-5p/miR429 miR21-5p/miR4443 miR222-3p/miR429 miR222-3p/miR4443 miR223-3p/miR429		0.85	75	90.91
miR223-3p/miR579-3p miR223-3p/miR4443	Pre-treatment (combination BCG + anti-PD-L1)	1	100	100
		0.78	67.86	88.89

What´s next?

From clinical validation to implementation

1 VALIDATION
(Already underway)

Multicenter clinical validation

1000 patients • 5 hospitals

Prospective study ongoing

2 QUALITY & REGULATORY
(2026)

ISO 13485 + IVDR readiness

- Quality system implementation
- Regulatory documentation
- CE pathway preparation

3 TECHNOLOGY TRANSFER
(2027)

Licensing-ready platform

- Transfer to certified labs and partners
- Partner enablement
- Scalable deployment model

Our goal is to make urine-based precision medicine clinically actionable in bladder cancer.

What´s next?

AECC-Innova BlaDimiR – Clinical trial

Objective 1: Primary tumor diagnosis

Prevalence: 10%
Sensitivity: 95%
Specificity: 86%

BlaDimiR DIAGNOSTIC

Objective 2: Detection of recurrences

Prevalence: 25%
Sensitivity: 91%
Specificity: 86%

BlaDimiR PLUS

Objective 3: Response prediction to BCG

Prevalence: 40%
Sensitivity: 100%
Specificity : 85%

What´s next?

Sample collection
(n = 600 D y S y
91 BCG)

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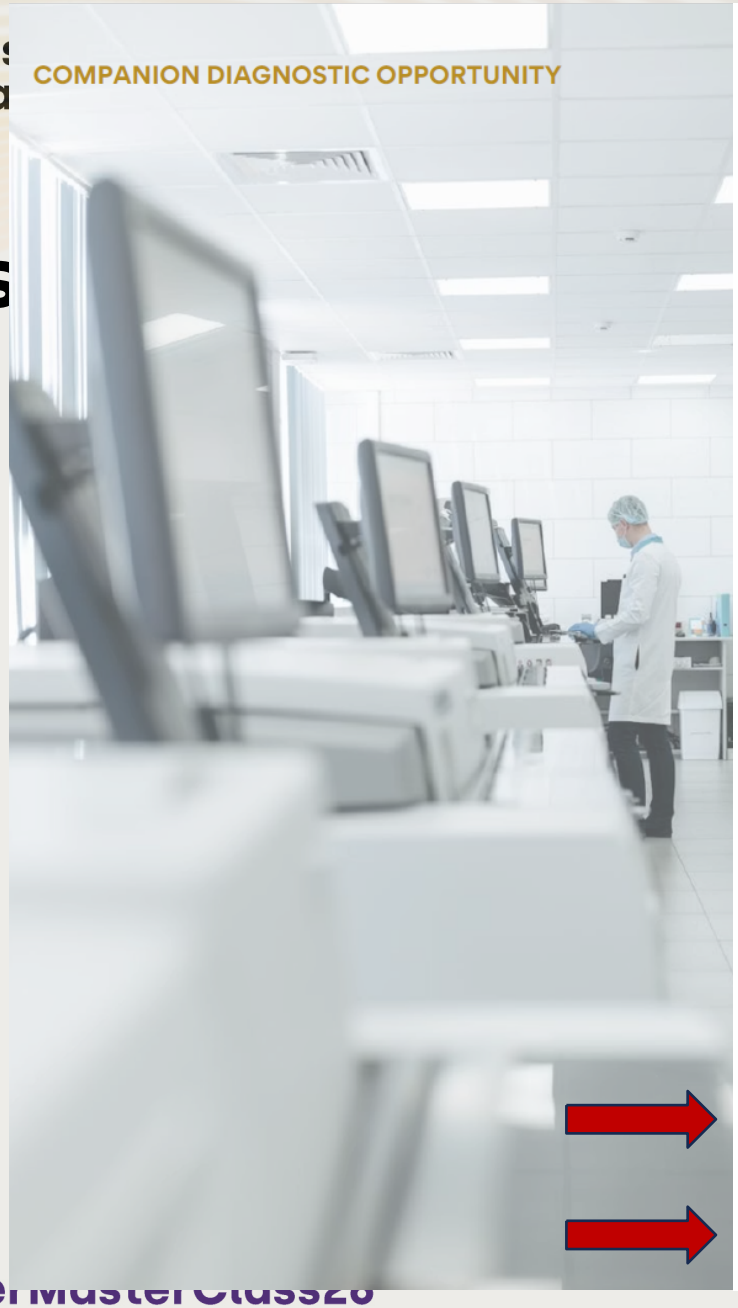
What´s next?



BlaDimiR as a Treatment Selection Companion Diagnostic

BlaDimiR is architected to stratify patients before therapy initiation and monitor molecular response longitudinally → purpose-built for **CDx co-development and regulatory co-submission**.

Patient Presents
Initial clinical evaluation and referral for therapy

BlaDimiR CDx Analysis
Urine-based companion diagnostic assay performed

Molecular Stratification
Classified as Responder or Non-Responder

Optimized Therapy
Treatment selected based on molecular stratification result

BCG Therapy
Predict response before initiation; avoid delayed escalation in non-responders

Anti-PD1 / PD-L1
Identify checkpoint inhibitor candidates and monitor on-treatment molecular dynamics

Emerging Therapeutics
Platform-ready for co-development with next-generation NMIBC and MIBC agents

Combination Regimens
Multi-biomarker signatures to support selection in complex combination therapy protocols

Take home message

- ✓ Urine can provide clinically useful molecular information.
- ✓ BlaDimiR is not just a test; it is not merely a diagnostic tool: it also helps guide treatment selection.
- ✓ The platform is designed to integrate into molecular pathology laboratories, not to complicate the clinical workflow.
- ✓ **We are not proposing to replace clinical judgement, but to add a non-invasive molecular layer to help urologists decide who needs closer surveillance, who may avoid unnecessary procedures, and who is more likely to benefit from each therapy.**

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¡Gracias!

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