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KEY TAKEAWAY

A novel urine-based test for *FGFRalt* eligibility was successfully implemented into the first-in-human study evaluating TAR-210, a novel intravesical drug delivery system that provides sustained, local release of erdafitinib within the bladder, with 27% (7/26) of patients enrolled based on urine alone due to lack of tissue or no *FGFRalt* found in tissue NAVIGATION

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FIGURE 3

Urine- and tissue-based testing identifies patients that experience clinical benefit from TAR-210

FIGURE 4 Landscape of pathogenic somatic variants detected in urine from all evaluable samples

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FGFRalt, FGFR alterations.



Roger Li¹, Ja Hyeon Ku², Antoni Vilaseca Cabo³, Felix Guerrero-Ramos⁴, Joshua Meeks⁵, Neil Beeharry⁶, Michelle Quiroz⁶, Jiarui Zhang⁶, Denis Smirnov⁶, Yashoda Rajpurohit⁶, Bethany Brunton⁶, Gabriela Martinez⁶, Carrye Cost⁶, Anna Kalota⁶, Josh Lauring⁶, Nicole L Stone⁶, Shibu Thomas⁶

CONCLUSIONS

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- Implementing a urine-based test expands the molecular testing methods to identify 7 (27%) additional patients that may respond to TAR-210
- The spectrum of genomic alt detected using the urine test was similar to that described in prior studies using tissue-based testing
- All patients in Cohort 3 who were enrolled by urine test showed clinical activity
- Obta highlight that the complex genomic landscape in bladder cancer can be assessed from urine
- Oata from this study support further clinical evaluation of the urine test

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APPENDIX

Urothelial Cancer



Roger Li¹, Ja Hyeon Ku², Antoni Vilaseca Cabo³, Felix Guerrero-Ramos⁴, Joshua Meeks⁵, Neil Beeharry⁶, Michelle Quiroz⁶, Jiarui Zhang⁶, Denis Smirnov⁶, Yashoda Rajpurohit⁶, Bethany Brunton⁶, Gabriela Martinez⁶, Carrye Cost⁶, Anna Kalota⁶, Josh Lauring⁶, Nicole L Stone⁶, Shibu Thomas⁶

INTRODUCTION

- Erdafitinib, an oral selective pan-FGFR tyrosine kinase inhibitor, is approved for locally advanced or metastatic urothelial carcinoma in adults with susceptible FGFR3/2 alterations (alt) after progression on platinum-containing chemotherapy¹⁻⁵
- TAR-210 is a novel intravesical drug delivery system designed to provide local, sustained release of erdafitinib within the bladder while limiting systemic toxicities⁶
 - TAR-210 shows promising clinical activity and is well tolerated in *FGFR*-altered non–muscleinvasive bladder cancer (NMIBC) in the first-in-human study (NCT05316155)⁶ (Figure 1)
- To overcome tissue-based challenges in identifying *FGFRalt*, including insufficient sample, sample integrity, and sample extraction from a single tumor,⁷ Janssen Research & Development partnered with Predicine to use a urine cell-free DNA diagnostic test (PredicineCARE[™]) to select patients for treatment with TAR-210
 - Validation of the urine test to detect *FGFRalt* was previously demonstrated using contemporaneous tissue and urine samples⁸
- Reported here are preliminary results of the urine test to detect *FGFRalt* to enable study enrollment, early efficacy data based on urine testing, and the characterization of the urine-defined genomic landscape

FGFR, fibroblast growth factor receptor.

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Landscape of pathogenic somatic variants detected in urine from all evaluable samples

Roger Li¹, Ja Hyeon Ku², Antoni Vilaseca Cabo³, Felix Guerrero-Ramos⁴, Joshua Meeks⁵, Neil Beeharry⁶, Michelle Quiroz⁶, Jiarui Zhang⁶, Denis Smirnov⁶, Yashoda Rajpurohit⁶, Bethany Brunton⁶, Gabriela Martinez⁶, Carrye Cost⁶, Anna Kalota⁶, Josh Lauring⁶, Nicole L Stone⁶, Shibu Thomas⁶

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 First-in-human study enrollment was based on detection of prespecified *FGFRalt* from either tumor tissue obtained from previous biopsies or urine samples obtained prior to enrollment (PredicineCARE[™] next-generation sequencing test) NAVIGATION

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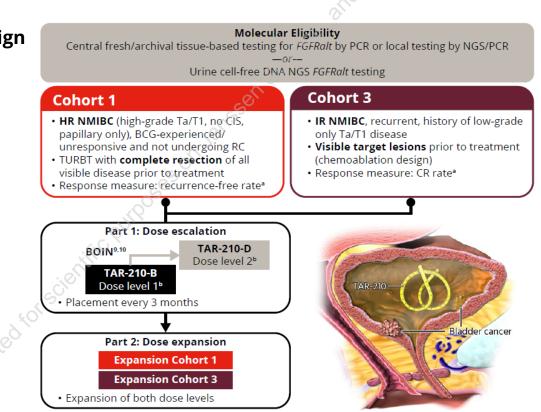
Urothelial Cancer



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FIGURE 1: First-in-human TAR-210 study design and depiction of TAR-210 in the bladder



^aResponse is assessed every 3 months with continued treatment for up to 1 year if recurrence-free (Cohort 1) or in CR (Cohort 3). ^b2 different erdafitinib release rates are being evaluated. BCG, bacillus Calmette-Guérin; BOIN, Bayesian optimization interval; CIS, carcinoma in situ; CR, complete response; DNA, deoxyribonucleic acid; HR, high risk; IR, intermediate risk; NGS, nextgeneration sequencing; PCR, polymerase chain reaction; PK, pharmacokinetics; RC, radical cystectomy; TURBT, transurethral resection of bladder tumor.

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FIGURE 4 Landscape of pathogenic somatic variants detected in urine from all evaluable samples

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RESULTS (1/6)

Screening

- As of Jun 20, 2023, urine test performance was compared to the tissue test from all screened patients with NMIBC (N=178) (Figure 2)
- The proportions of samples that yielded evaluable results were 58% and 60% from urine and tissue, respectively
- *FGFRalt* detection rates in the subsets that yielded positive results were 42% from urine and 62% from tissue
- FGFR3 S249C was the most frequent alt detected in both urine (61%) and tissue (48%) (Table 1)
- For 36% of urine samples in which FGFRalt were detected, there was no corresponding tissue result
- In all instances, the same *FGFRalt* were detected in both urine and tissue

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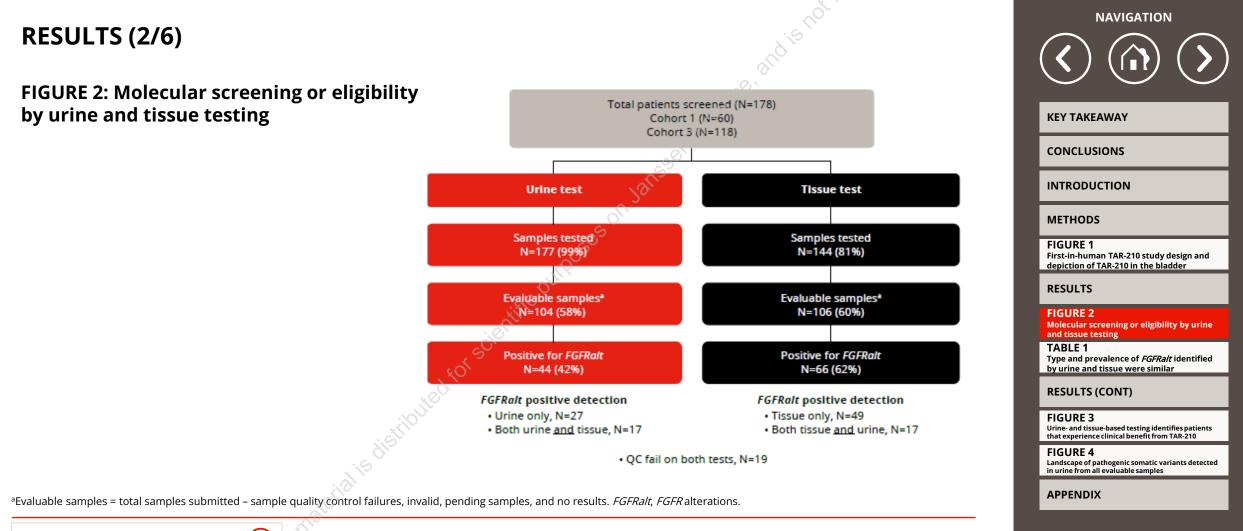
FIGURE 4 Landscape of pathogenic somatic variants detected in urine from all evaluable samples

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RESULTS (3/6)

TABLE 1: Type and prevalence of FGFRaltidentified by urine and tissue were similar

	N=178	
<i>FGFRalt</i> type, n (%)	Urine test	Tissue test
Specific FGFR3 mutation	eser of	
S249C	27 (61)	33 (48)
Y373C	14 (32)	25 (36)
R248C	2 (5)	6 (9)
G370C	0	2 (3)
Specific gene fusions	21	
FGFR3:TACC3_V1	1 (2)	3 (4)
atorial		

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RESULTS (4/6)

Efficacy Based on Urine Testing

- Of the disease-evaluable patients with HR NMIBC (N=11) in Cohort 1 or IR NMIBC (N=15) in Cohort 3, 46% (5/11) and 20% (3/15), respectively, were enrolled based on both urine and tissue testing
- 18% (2/11) of disease-evaluable patients in Cohort 1 and 33% (5/15) in Cohort 3 were enrolled based on urine testing alone due to no sample/insufficient tumor tissue
- In Cohort 1, 82% of patients were recurrence-free at the first disease evaluation, and in Cohort 3, 87% achieved a complete response at the first disease evaluation (Figure 3)
 - All patients (Cohort 1, N=2, and Cohort 3, N=5) enrolled by "urine only" were recurrence free or achieved a complete response
- Urine-based testing reliably captured the spectrum of genomic alt that were similar to those observed in tissue-based genomic landscape assessments of bladder cancer¹¹ (Figure 4)

HR, high risk; IR, intermediate risk; NMIBC, non-muscle-invasive bladder cancer.

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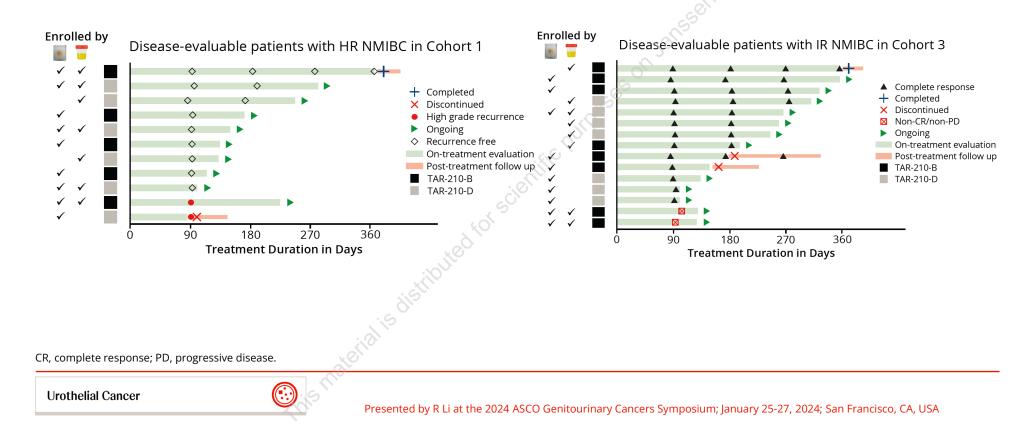


Landscape of pathogenic somatic variants detected in urine from all evaluable samples

Roger Li¹, Ja Hyeon Ku², Antoni Vilaseca Cabo³, Felix Guerrero-Ramos⁴, Joshua Meeks⁵, Neil Beeharry⁶, Michelle Quiroz⁶, Jiarui Zhang⁶, Denis Smirnov⁶, Yashoda Rajpurohit⁶, Bethany Brunton⁶, Gabriela Martinez⁶, Carrye Cost⁶, Anna Kalota⁶, Josh Lauring⁶, Nicole L Stone⁶, Shibu Thomas⁶

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FIGURE 3: Urine- and tissue-based testing identifies patients that experience clinical benefit from TAR-210



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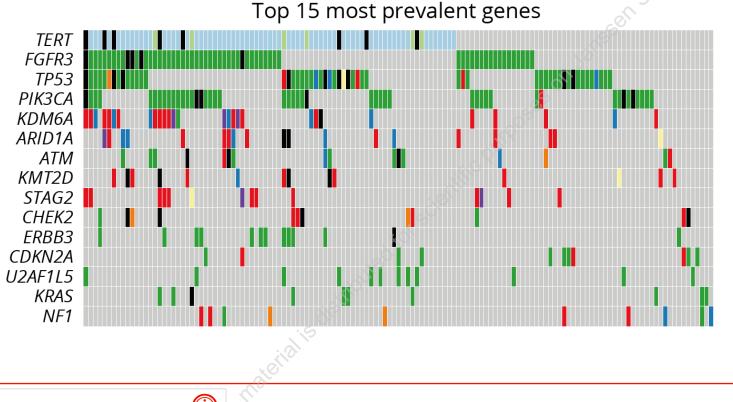
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FIGURE 4 Landscape of pathogenic somatic variants detected in urine from all evaluable samples

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FIGURE 4: Landscape of pathogenic somatic variants detected in urine from all evaluable samples



Missense_Mutation
Nonsense_Mutation
Frame_Shift_Del
5'Flank
Splice_Site
5'UTR
Frame_Shift_Ins
In_Frame_Del
In_Frame_Ins
CNV_Deletion
CNV_Amplification
Multi Hit



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REFERENCES:

1. BALVERSA® (erdafitinib) [package insert]. Horsham, PA: Janssen Products, LP; 2023. 2. Perera TPS, et al. Mol Cancer Ther. 2017;16:1010-1020. 3. Loriot Y, et al. N Engl / Med. 2019;381:338-348. 4. Siefker-Radtke AO, et al. Lancet Oncol. 2022;23:248-258. 5. Loriot Y, et al. N Engl / Med. 2023;389:1961-1971. 6. Vilaseca A, et al. Ann Oncol. 2023;34:S1343. 7. Li S, et al. Nat Commun. 2021;12:4172. 8. Kim I, et al. J Clin Oncol. 2023;41:6:565. 9. Liu S, Yuan Y. J R Stat Soc. 2015;64:507-523. 10. Yuan Y, et al. Clin Cancer Res. 2016;22:4291-4301. 11. Zhang R, et al. / Urol. 2021;206:873-884.

DISCLOSURES:

Roger Li has served as a scientific advisor/consultant for BMS, Merck, Ferring, Fergene, Arquer Diagnostics, Urogen Pharma, and Lucenc; has served on the clinical trial protocol committee for CG Oncology; has received research support from Predicine, Veracyte, CG Oncology, and Valar Labs; and has received honoraria from SAI MedPartners and Solstice Health Communications.

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