

E&P Small Cap Healthcare Conference

Developing the next-generation of radiopharmaceuticals to improve treatment outcomes for children and adults with cancer

Dr Colin Biggin, Managing Director and CEO

8th September 2023

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Corporate Snapshot

Proprietary SAR Technology: a true platform technology

Three best-in-class products in clinical development offering high accuracy and precision for both diagnosing and treating disease

Environmental

advantages over

current isotopes

No reliance on nuclear

fuel cycle; TCTs do not

aenerate lona-lived

waste products

Global leader in Targeted Copper Theranostics (TCTs)

Employs copper-64 for diagnosis and imaging and copper-67 for therapy

Forgeted elipical

Targeted clinical development strategy

Commercialisation of diagnostic products first, generating revenue to fund late-stage therapeutic trials Highly experienced leadership team

Significant supply,

logistical, dependability

and scalability benefits

Mass production of isotopes

accelerators with finished products having an ideal

on cyclotrons and e-

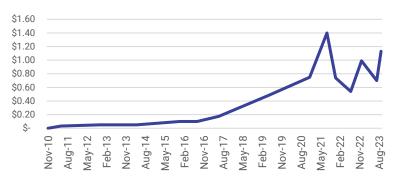
product shelf life

Diverse and in-depth expertise spanning corporate finance, operations, commercialisation & industry. Significant radiopharmaceutical experience across all functions Clarity Pharmaceuticals is a clinical stage radiopharmaceutical company developing next-generation products to address the growing need for better diagnostics and treatments in oncology

ASX code:	CU6
Share Price	A\$1.13
Cash at bank ¹	A\$65M
Shares on issue	261.9M
Options on issue	26.3M
Market cap (undiluted) ²	A\$295.9M

As at 30 June 2023
 As at 8 September 2023

Share price



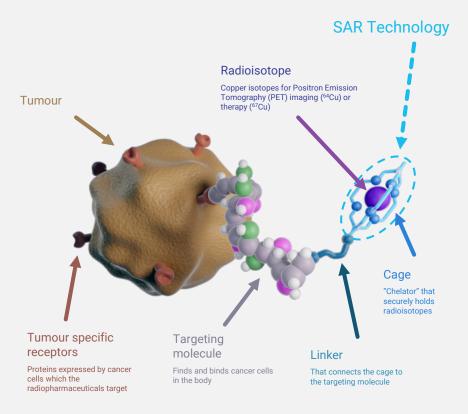
CLARITY

Clarity – The Copper Theranostics Company

Targeted Copper Theranostics are the nextgeneration disruptive platform in radiopharmaceuticals that employ the "perfect pairing" of copper-64 (⁶⁴Cu) and copper-67 (⁶⁷Cu) for diagnosis and therapy

Proprietary SAR Technology enables Targeted Copper Theranostics

- Clarity's SAR technology is a proprietary, highly specific and highly stable bifunctional cage (chelator) with a superior ability to retain copper isotopes within it and prevent their leakage into the body
- TCT deliver a compelling combination of high accuracy and high precision in the treatment of a range of cancers, as well as providing supply and logistical advantages over current theranostics



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Why Copper?

The physical properties of copper-64 and copper-67 have optimal characteristics for global commercialisation

Diagnostic radionuclides

	Copper-64	Gallium-68	Fluorine-18	
Half life	12.7 hours	1.1 hours	1.83 hours	
Typical product shelf life	Up to 48 hours	Up to 4 hours	Up to 10 hours	
Production	Cyclotron	Mainly from Generators	Cyclotron	
lmaging window	From 1 to 48 hours	~60 mins	~60 mins	
Ability to centrally manufacture	Yes	No	No	

64Cu-SARbisPSMA PET Day 1

Therapeutic radionuclides

	Copper-67	Lutetium-177		
Half life	2.6 days	6.7 days		
Decay mode	Beta emitter	Beta emitter		
Range in tissue	~0.7mm	~0.7 mm		
Production mode	Electron accelerators	Nuclear reactors		
Cost to scale supply	Low (~US\$15M)	High (>US\$1Bn)		
Time to scale supply	Quick (<18 months)	Slow (>10 years)		





Dual development strategy

SAR Technology enables a synergistic development of standalone diagnostics as well as paired theranostics

Diagnostics based on ⁶⁴Cu

Broad market opportunities



- Address the current supply
 and logistical constraints in the industry
- Provide universal access to diagnostic agents
- Short time to market, provides revenue for later stage therapy development
- Low production and distribution costs shield potential revenues from loss of pass-through-status after 3 years in the US





Marketed Dx re-enforces Tx position

Theranostics based on ⁶⁴Cu/⁶⁷Cu

- High precision, high accuracy
- Blockbuster potential for a range of assets
- Easy to scale up

Positive for target

Copper-67 therapy

- Domestic US supply
- No reliance on aging nuclear reactors

Diagnostic imaging scan with copper-64



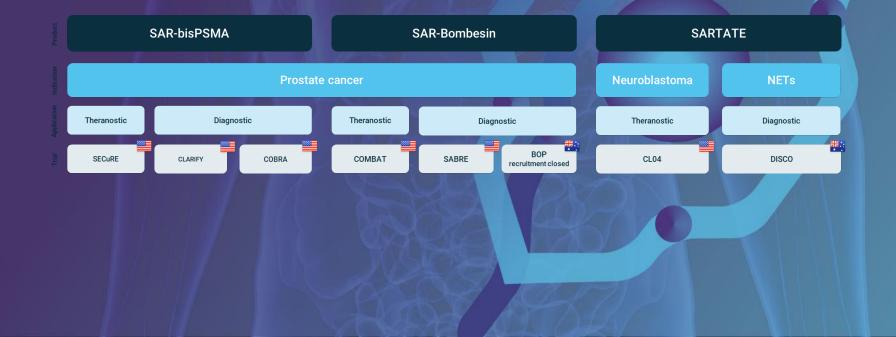
Negative for target



Conventional therapy



Three key product areas



Clinical development in multiple cancers

Clarity's products are progressing through sponsored clinical trials in the US and Australia

Clinical development pipeline as of 8 September 2023

Indication	Product	Application	Current Trial	Discovery	Preclinical	Phase I	Phase 2	Phase 3	Next Milestone
Prostate Cancer	SAR-bisPSMA	Theranostic mCRPC	S E <mark>Cu</mark> R E						Advance to cohort 4
	SAR-bisPSMA	Diagnostic in pre- radical prostatectomy	CLARIFY,			****			CLARIFY Phase III opens for recruitment
	SAR-bisPSMA	Diagnostic in BCR PCa	COBRA						COBRA top line data
	SAR-BBN	Diagnostic in BCR PCa	SABRE		**:				SABRE recruitment complete
	SAR-BBN	Theranostic mCRPC	С 🔊 М В А Т		<u> </u>				Cohort 1 complete
Neuroblastoma	SARTATE™	Theranostic	CL04						Cohort 4 complete
NETs	SARTATE™	Diagnostic	DISCÓ		*:		*		DISCO recruitment complete
SAR Discovery Platform	Undisclosed	Undisclosed		*	*				
	Undisclosed	Undisclosed		*	*				

Current progress 12

ess 12 month progress

Note clinical development pipeline is indicative only, subject to review. All US studies are conducted under IND



Prostate cancer

Two product areas: bisPSMA & Bombesin

Four products for diagnosis and therapy

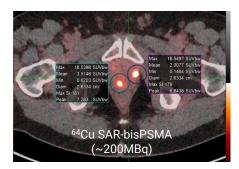


Clarity's three areas of focus in prostate cancer

Prostate cancer is the second largest oncology indication in men; there are three stages of prostate cancer

Primary

- PC localised in the prostate gland with a main (primary) tumour
- Unless the disease has spread, the most common treatment is a surgery called prostatectomy (removal of the prostate) or radiation therapy



Biochemical recurrence (BCR)

- PC that persists after primary therapy
- Prostate-specific antigen (PSA) level rising indicates presence of PC
- Up to half of PC patients have BCR after primary curative therapy

⁴Cu-SARbisPSMA PET Dav 1

Metastatic castration-resistant (mCRPC)

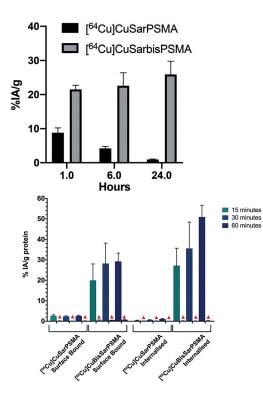
- PC that spread beyond the prostate gland and is growing in other organs and tissues
- No longer responds to treatments that lower testosterone or to hormone therapy
- Form of advanced PC that shows signs of growth and a rising PSA level



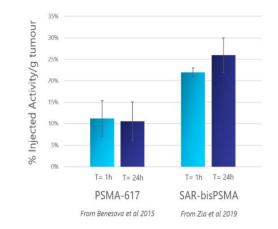


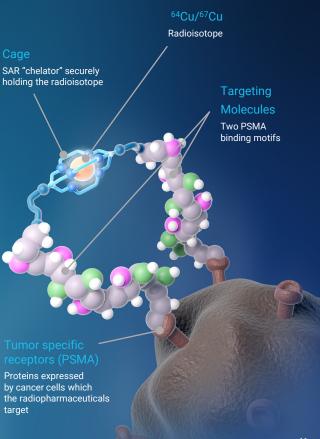
SAR-bisPSMA

Superior performance of bisPSMA compared to monomer PSMA



bisPSMA has higher uptake in tumours and strong retention compared to PSMA monomers







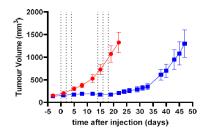
SAR-Bombesin

SAR-Bombesin targets Gastrin Releasing Peptide receptor (GRPr) that is overexpressed in a number of cancers including prostate, breast, colon, gastric, glioma, pancreatic, small cell lung and non-small cell lung cancer, as well as renal cell cancer

SAR-Bombesin in prostate cancer (PC)

- 75%-100% of PCs express GRPr
- ~25% of PC patients do not express PSMA
- PSMA-negative PC patients will not respond to PSMA imaging or therapy
- SAR-Bombesin is now under investigation as a theranostic as well as a stand-alone diagnostic imaging agent for PC that is PSMA-negative or has a low expression of PSMA

Efficacy of Cu SAR-Bombesin in a mouse model of PC

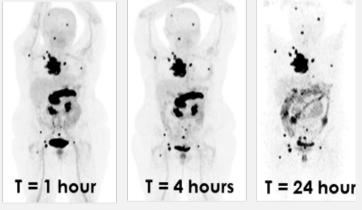


 Control group
 ⁶⁷Cu-SAR-Bombesin treated group

⁶⁷Cu SAR-Bombesin has demonstrated an anti-tumour effect in preclinical models of PC when compared to the control group



⁶⁸Ga PSMA-11 (top) images of a PSMAnegative patient with clinical signs of prostate cancer (a rising PSA score of 0.16 ng/mL) and ⁶⁴Cu SAR-Bombesin PET/CT images of the same patient (bottom)



⁶⁴Cu SAR-Bombesin is retained in the tumours while quickly clearing from the pancreas in hormone positive metastatic breast cancer

⁶⁴Cu-SAR diagnostics

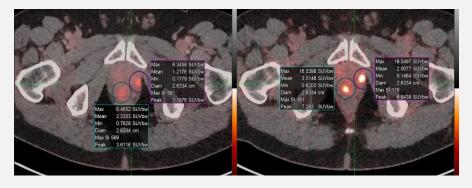
Next-generation SAR-bisPSMA diagnostic is coming

Improved uptake of SAR-bisPSMA may support better diagnosis compared to first-generation PSMA PET agents. Significant market opportunity to displace currently approved products, which are set to generate > US\$1Bn in 2023.

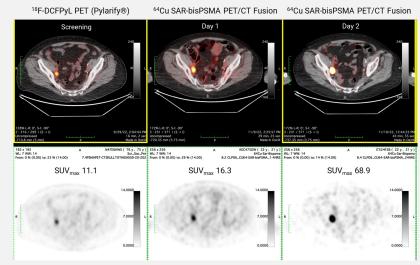


Comparison with ⁶⁸Ga PSMA-11 – PROPELLER study

Comparison of ⁶⁸Ga PSMA-11 (image left) to Clarity's ⁶⁴Cu SAR-bisPSMA (image right) in the same patient



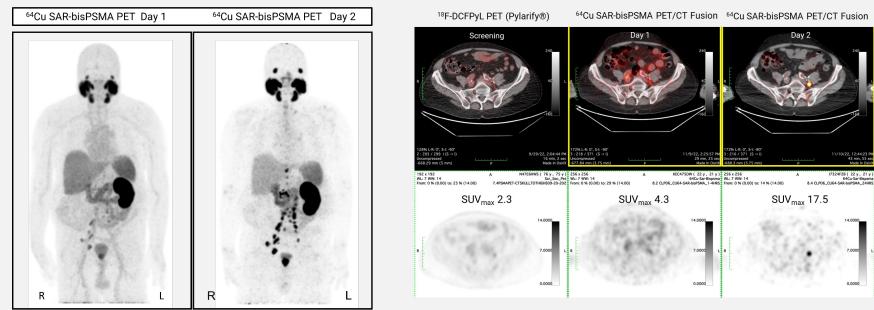
Comparison with PYLARIFY® – COBRA study



Copper brings significant additional advantages

Beyond the supply chain advantages of a 12.7 hour half-life PET imaging agent, SAR-bisPSMA allows patients to be imaged from 1 hour to >24 hours post administration

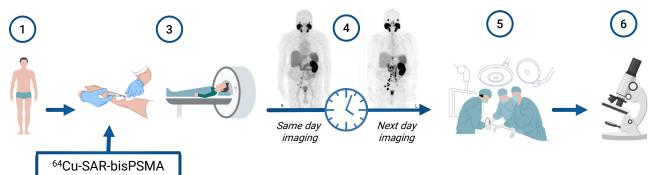
Cu-64 SAR-bisPSMA PET has the ability to image both on the day of administration and at later timepoints, potentially providing clinicians with better insight into the disease



Images from Clarity's COBRA study

CLARIFY - registrational Phase III trial

CLARIFY is a Phase III diagnostic trial assessing diagnostic performance of ⁶⁴Cu SARbisPSMA in detecting pelvic lymph node metastases of prostate cancer using PET/CT in 383 participants. Recruitment to commence Q4 2023.



2



PROPELLER trial: PET/CT demonstrated uptake of ⁶⁴Cu SARbisPSMA (F) in a left pelvic lymph node according to both readers and PC was confirmed via histopathology. Readers did not detect uptake in pelvic lymph nodes on the ⁶⁸Ga PSMA-11 PET/CT (E). Time between serial imaging was 7 days.

CLARIFY,

- Patients with untreated, newly diagnosed prostate cancer who are proceeding to surgery
- Manufacturing of ⁶⁴Cu SAR-bisPSMA
- ⁶⁴Cu SAR-bisPSMA administration followed by PET/CT scan
- 4. "Same day" and "next day" imaging (day 1 and day 2)
- 5. Surgical removal of the prostate and pelvic lymph nodes
- 6. Histopathology to confirm the results of the PET scan



SAR-Bombesin

SAR-Bombesin targets Gastrin Releasing Peptide receptor (GRPr) that is overexpressed in a number of cancers including prostate, breast, colon, gastric, glioma, pancreatic, small cell lung and non-small cell lung cancer, as well as renal cell cancer

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ARITY

SAR-Bombesin in PSMAnegative prostate cancer

- **Phase II** Positron Emission Tomography (PET) imaging trial of participants with PSMAnegative biochemical recurrence (BCR) of prostate cancer following definitive therapy
- The primary objectives of the trial are to investigate the safety and tolerability of the product as well as its ability to correctly detect recurrence of PSMA-negative prostate cancer

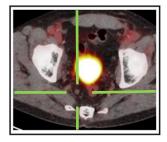
Status

- Recruitment ongoing in the US
- 50% recruitment on 24 July 2023

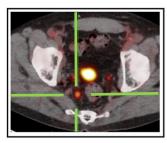
Next Milestone

• Recruitment complete in Q4 23

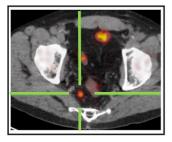
¹⁸F-DCFPyl PET/CT (Pylarify®)



⁶⁴Cu SAR-BBN PET/CT Day 1







Single pelvic lymph node uptake seen on ⁶⁴Cu SAR-BBN on both Day 1 and Day 2. A subsequent biopsy has confirmed prostate cancer.

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⁶⁷Cu-SAR therapeutics

Metastatic castration-resistant prostate cancer

Clarity is conducting two theranostic clinical trials in mCRPC with two products to treat PSMA-positive, PSMA-negative lesions and those with low PSMA expression

SAR-bisPSMA



- Phase I/IIa study of ⁶⁴Cu/⁶⁷Cu SAR-bisPSMA for identification and treatment of PSMA-expressing mCRPC
- Theranostic multi-centre, single arm, dose escalation study with a cohort expansion planned for up to 44 patients
- Dose escalation phase aims to find the highest dose of ⁶⁷Cu SAR-bisPSMA that can be given safely and expand patient numbers at that dose in the dose expansion phase

Status

- Dosimetry phase with ⁶⁴Cu SAR-bisPSMA in mCRPC completed
- Dose escalation phase underway
- Cohort 1 completed with no safety issues (4GBq dose level)
- Cohort 2 completed with no safety issues (8GBq dose level)
- Cohort 3 recruiting (1st patients dosed at 12GBq dose level)

Next milestone

Cohort 4 open for recruitment

SAR-Bombesin

С 🔊 М В А Т

- A Phase I/IIa theranostic study of ⁶⁴Cu SAR-Bombesin and ⁶⁷Cu SAR-Bombesin for identification and treatment of GRPR-expressing mCRPC in patients who are ineligible for therapy with ¹⁷⁷Lu-PSMA-617
- Theranostic, multi-centre, single arm, dose escalation/dose expansion study with a cohort expansion planned for up to 38 patients

Status

Open for recruitment

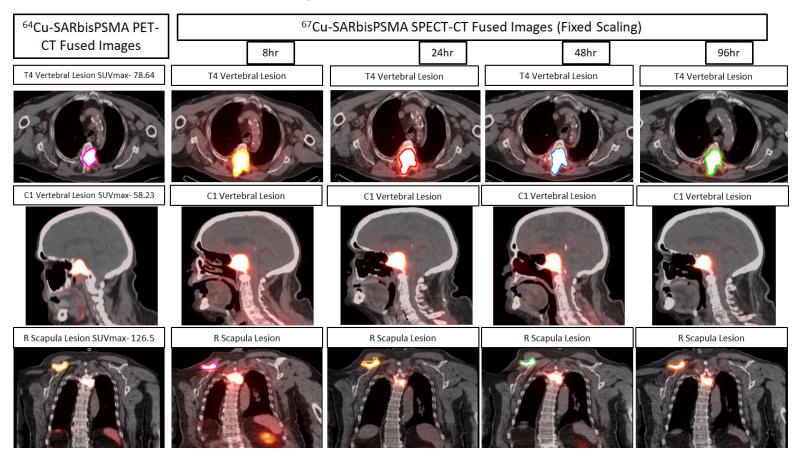
Next milestone

Cohort 2 open for recruitment



SECuRE cohort 1 - 4GBq dose level







US FDA Expanded Access Program

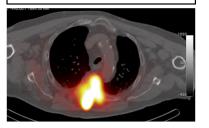
- Additional therapy cycles of ⁶⁷Cu SARbisPSMA at the lowest 4GBq dose level have been requested under the US FDA Expanded Access Program (EAP)
- Early data indicates positive effects
- SPECT-CT images (on the right) demonstrate a reduction in the intensity of product uptake at the tumour sites after four doses, signaling tumour shrinkage
- Same patient experienced a reduction in PSA levels >50% following the first dose, and a >90% decline in PSA after dose 4

4GBq ⁶⁷Cu SAR-bisPSMA over 4 cycles

⁶⁷Cu-SARbisPSMA SPECT-CT (Fixed Scaling)

Post-Therapy (Cycle 1) 48hr

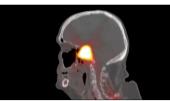
Post-Therapy (Cycle 4) 48hr

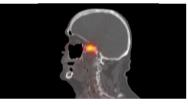


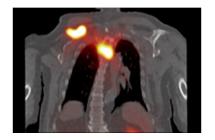
15 Oct 2022



29 Jun 2023





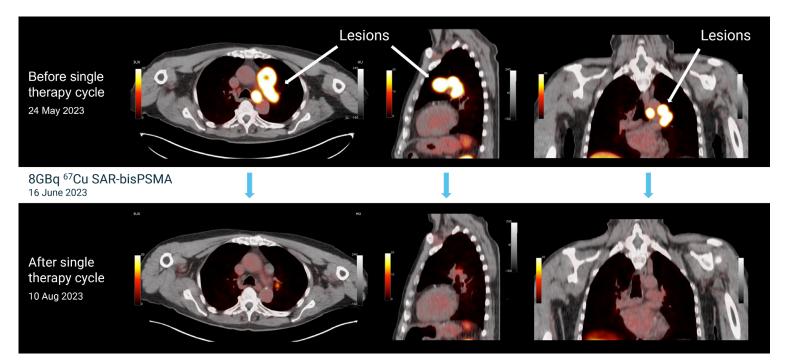




SECuRE cohort 2 - 8GBq dose level (single cycle)



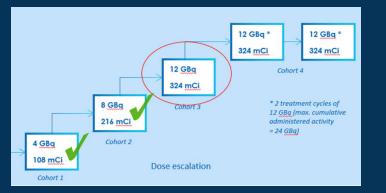
- No Dose Limiting Toxicities with single cycle at 8GBq
- All 3 participants had a PSA drop of > 70%
- Significant reduction in uptake of the diagnostic dose after a single 8GBq therapy cycle



⁶⁴Cu SAR-bisPSMA PET/CT imaging before and after a single cycle of 8GBq ⁶⁷Cu SARbisPSMA (cohort 2)

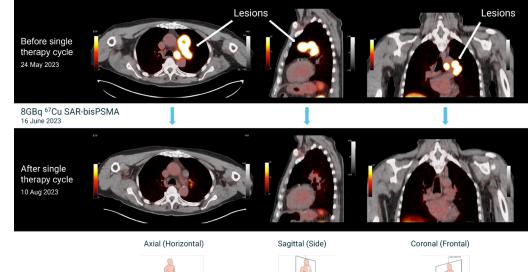
⁶⁷Cu SAR-bisPSMA in mCRPC: Now in cohort 3

- No Dose Limiting toxicities with single cycles at 8GBa
- All 3 participants had a PSA drop of > 70%
- Additional 8GBg doses requested under FDA EAP
- Now administering 12GBq doses in cohort 3 (6 patient cohort)



S E Cu R E

⁶⁴Cu SAR-bisPSMA PET/CT imaging before and after a single cycle of 8GBg ⁶⁷Cu SAR-bisPSMA (cohort 2)





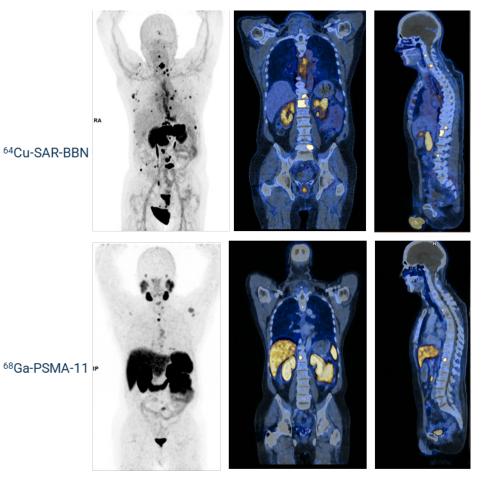




⁶⁷Cu SAR-Bombesin in mCRPC

Benefits

 ⁶⁷Cu SAR-Bombesin could be used in combination with PSMA-based therapies to ensure both PSMA- and GRPr-positive tumours are treated, or as a stand-alone therapy in PSMAnegative PC ⁶⁴Cu SAR-Bombesin and ⁶⁸Ga PSMA-11 PET and PET/CT images in a participant in the BOP IIT (mCRPC cohort) conducted by Prof Emmett at St Vincent's hospital in Sydney, Australia





Neuroblastoma therapy with ⁶⁷Cu SARTATE

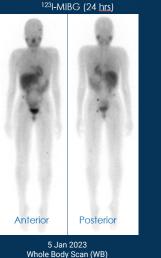
CL04: 64Cu/67Cu SARTATE Phase I/IIa trial in highrisk neuroblastoma in the US with up to 34 patients

Trial Design

RITY

Multi-centre, dose-escalation/dose-expansion, open label, nonrandomised, theranostic clinical trial

CL04 patient dosed with 12.4GBg Cu-67 SARTATE in Feb 23



⁶⁴Cu-SARTATE



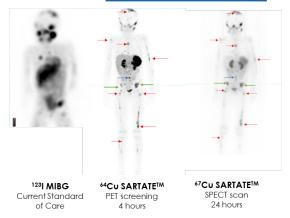
CL04 trial is a ⁶⁷Cu-SARTATE peptide receptor radionuclide therapy administered to paediatric patients with high-risk, relapsed, refractory neuroblastoma

Status

- Cohort 1 complete, no safety issues (3 patients) 75MBq/kg b.w.
- Cohort 2 complete, no safety issues (3 patients) 175MBg/kg b.w.
- Cohort 3 complete, no safety issues (3 patients) 275MBq/kg b.w.
- Cohort 4 recruiting ٠ (6 patients) 375MBg/kg b.w
- Recruiting at multiple ٠ sites in the US

(in the same patient)

High Accuracy

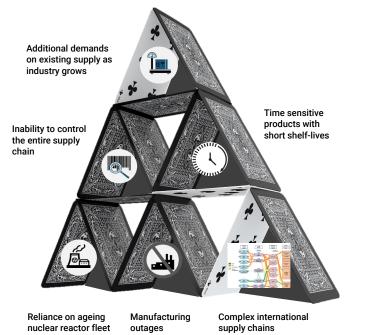


CL04

High Precision

The Supply Differentiator

Current industry challenges



Combined with a history of supply issues



Create challenges for prescribers

Oncologists need a safe, dependable and reliable source of radiopharmaceutical products

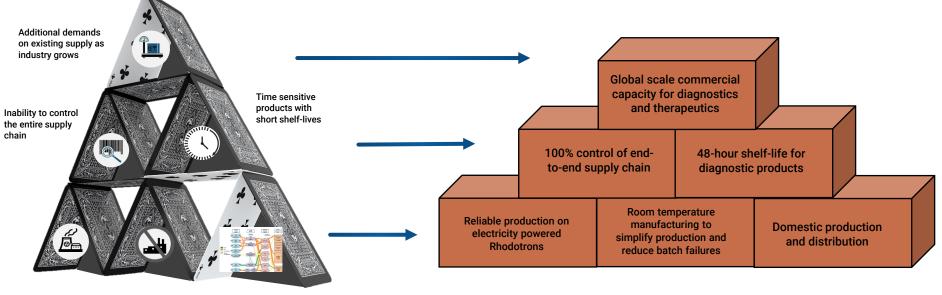
"We have patients on months long waiting lists when this may be all the time they have, and so it's been really disheartening to have to deal with these things"

- Roby Thomas, MD, a medical oncologist and hematologist at UPMC Hillman Cancer Center



Current industry challenges

Clarity's TCTs Solution



Reliance on ageing Manufacturing nuclear reactor fleet outages

Complex international supply chains

> "We have patients on months long waiting lists when this may be all the time they have, and so it's been really disheartening to have to deal with these things"

> > - Roby Thomas, MD, a medical oncologist and hematologist at UPMC Hillman Cancer Center

MANUFACTURIN

CLARITY

Novartis halts US production of cancer radiotherapies, citing potential quality issues

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Next-generation theranostics provide solutions to the challenges with current-generation radiopharmaceuticals

Opportunities with ⁶⁴Cu (half-life = 12.7h)

- · Can be mass produced on cyclotrons with solid targetry
- Every US zip code covered from 1 location
- · Patient flexibility with product shelf life of up to 48 hours
- Operational flexibility with imaging timepoints up to 72 hours
- 9-22 times lower exposure than commonly used ¹⁸F products
- · Ability to centralise investments and supply the country
- Delivered as a ready-to-use cGMP product



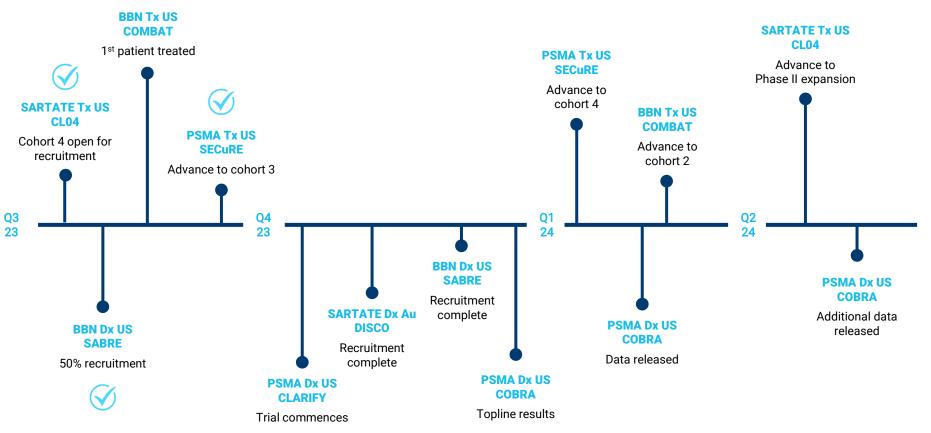
Opportunities with Rhodotron produced ⁶⁷Cu

- Commercially available high powered rhodotron with a small footprint (10' diameter and 11' tall)
- Scalable with relatively small investments
- Purpose-built supply in the markets of focus, including a US domestic supply
- Only inputs are electricity and Zinc
- No long-lived impurities
- Exclusive supply agreement with NorthStar Medical Isotopes
- A single rhodotron can produce commercial quantities of ⁶⁷Cu

"Access to reactors will soon become the bottleneck for ¹⁷⁷Lu"¹



Key upcoming milestones

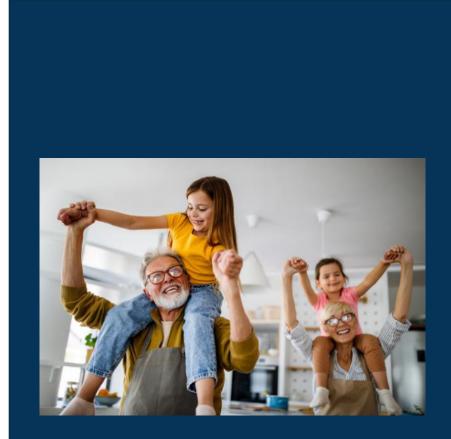




Summary

Global leader in Targeted Copper Theranostics (TCTs)

- Extensive pipeline of TCTs based on ⁶⁴Cu for diagnosis and ⁶⁷Cu for therapy
- Multiple therapeutic and diagnostic trials in progress with Phase III clinical trials commencing from 2023
- TCTs address the current **manufacturing and logistical** limitations in the growth of radiopharmaceuticals
- TCTs are scalable, sustainable and dependable
- Broad and defensible IP portfolio of patent families across the SAR Technology platform, pipeline and products
- Pipeline includes large and orphan indications, with focus on the US for first approvals
- Well funded with ~\$65million to fund the existing trials and provide cash runway into 2024
- Led by an experienced management team and Board with significant years of active involvement in the radiopharmaceutical industry
- Highly active M&A sector with numerous recent acquisitions





Thank you

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