INOVIQ
investor briefing

CAR-exosome therapeutic program

3rd April 2025

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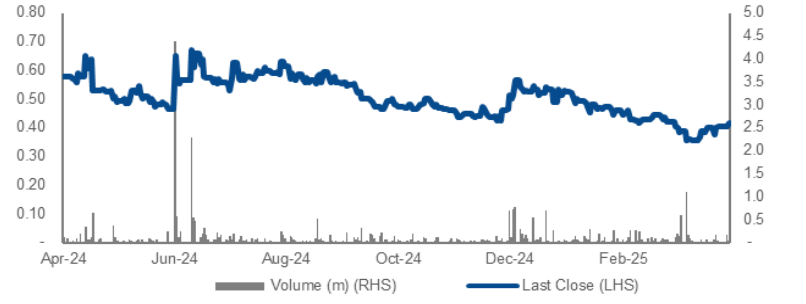
INOVIQ overview| Next-generation diagnostics and therapeutics for cancer

- Proprietary **exosome platform** with multiple research, diagnostic and therapeutic applications
- **Exosome research tools** commercially available through global distribution partner
- Clinical-stage **OC screening test** and **BC monitoring test**
- Preclinical-stage next-gen **exosome therapeutic** in development for TNBC
- **Partnering** and strategic acquisitions to expedite commercialisation and growth
- Leadership team with proven experience in **exosome science, development and commercialisation**

Financial snapshot (ASX:IIQ)	
Market capitalisation	A$46.3m
Share price (2 Apr 2025)	A$0.415
52-week H/L	A$0.80-0.345
Ordinary shares	111,526,702
Listed / Unlisted options	9,753,913 / 8,791,667
Cash at bank (31 Dec 2024)	A$9.48m

Major shareholders (25 Mar 2025)	
Merchant Funds Management	10.5%
Biotech Capital Management	4.6%
David Williams	4.5%

IIQ 12-month share price performance[1]

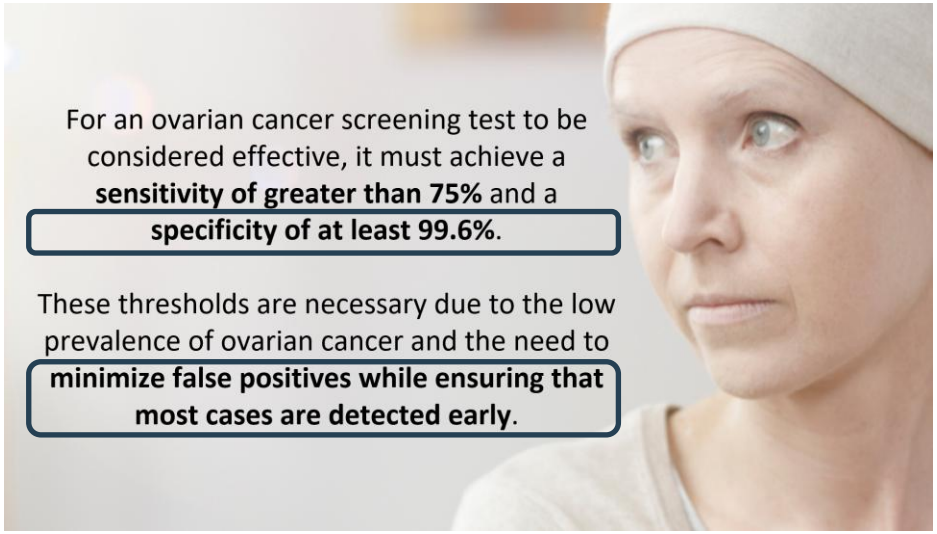


Lead Products in Development

1. A **screening test** for Ovarian Cancer

2025 ASCO ANNUAL MEETING

May 30 - June 3, 2025 • McCormick Place • Chicago, IL & Online



Specificity tells you how good a test is at correctly identifying women who do not have ovarian cancer.

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Lead Products in Development

1. A **screening test** for Ovarian Cancer

2. A **targeted treatment** for Triple-Negative Breast Cancer (TNBC)

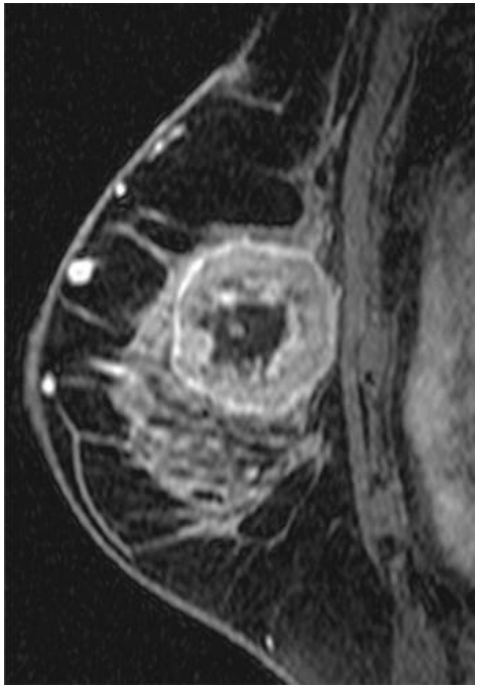


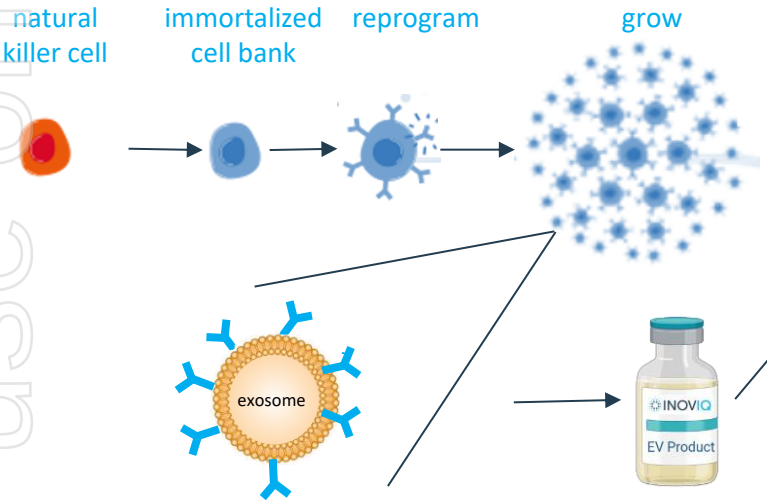
Figure 1: Triple-negative breast cancer of left breast in 52-year-old woman.

Uematsu T. Published Online: March 01, 2009
https://doi.org/10.1148/radiol.2503081054

Pipeline Priorities| Exosome diagnostics and therapeutics

Lead Products in Development

A **targeted treatment** for Triple-Negative Breast Cancer (TNBC)



Allogeneic CAR-EV NK Therapy

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Why focus on Triple-Negative Breast Cancer?

- Unlike other breast cancer types there are **no approved targeted treatments** available
- TNBC lacks the **three most common drug targets for breast cancer treatment:** estrogen receptor [ER], progesterone receptor [PR] and human epidermal growth factor receptor 2 [HER2] protein
- **Limited treatment options:** hormone therapy and HER2-targeted treatments are ineffective. Chemotherapy remains the most common treatment option for TNBC
- **Higher risk of recurrence:** initially responds well to chemotherapy (*e.g.,* anthracyclines, taxanes, platinum agents), **resistance often develops, leading to relapse**
- **Clinical need for targeted treatment**

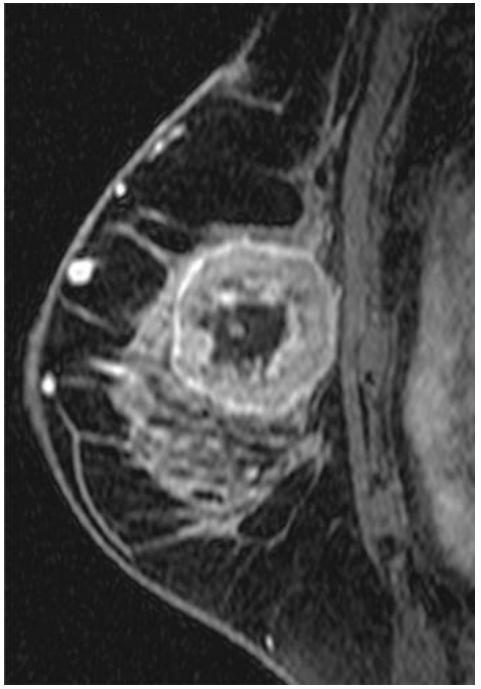

Figure 1: Triple-negative breast cancer of left breast in 52-year-old woman.

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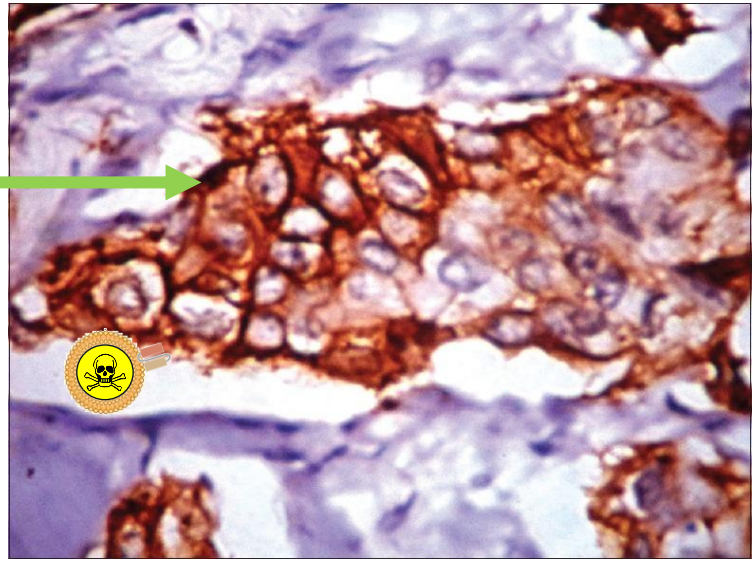
INOVIQ's approach is to develop a targeted treatment for TNBC

The target …

- **EGFR protein** on the surface of TNBC cells

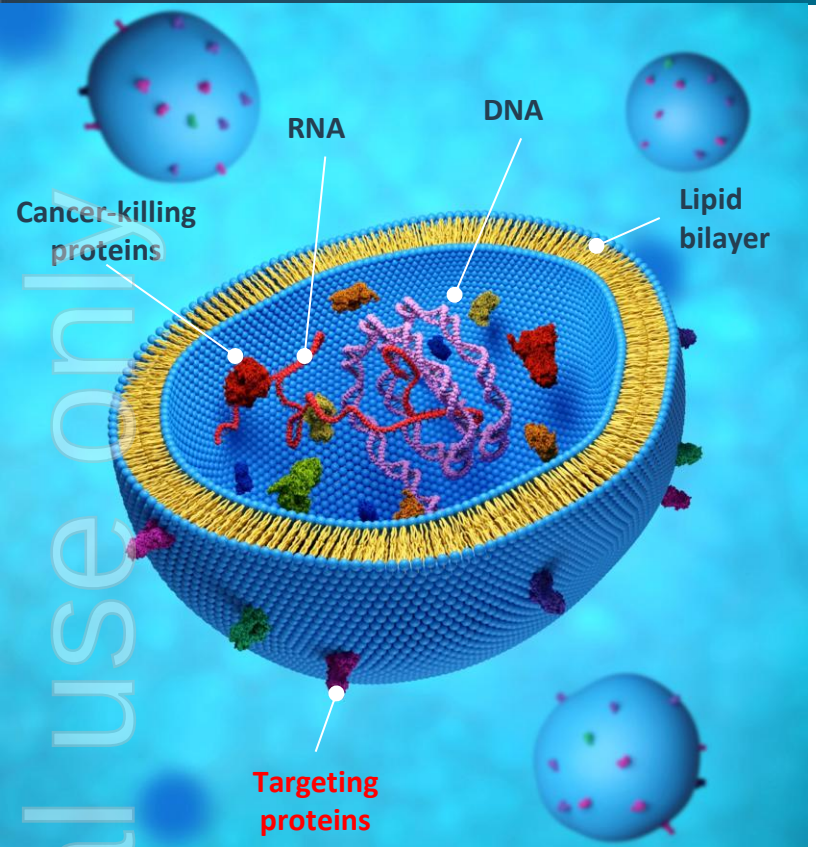
The therapeutic agent…

- **Cancer-killing exosome** that targets EGFR-expressing TNBC cells
- Targeting cancer cells is achieved by adding onto the surface of the exosomes a protein that binds to EGFR and then release cytotoxic biomolecules



EGFR is overexpressed in up to 90% of TNBC cases, which is higher than other breast cancer types.

Exosomes| Significant diagnostic and therapeutic potential



- Exosomes are tiny "packages" released by cells that help them communicate with each other.
- 200 times smaller than a cell: 100,000,000,000 per ml of blood
- They are like microscopic delivery trucks, carrying bioactive substances such as proteins, RNA, and other molecules from one cell to another.
- These packages are surrounded by a protective membrane that allows them to move between cells safely.
- INOVIQ's exosomes carry cancer-killing agents to TNBC by targeting EGFR that is over expressed on the surface of the cancer cell. **CAR-NK-EVs**

*Exosomes = small **Extracellular Vesicles (EV)***

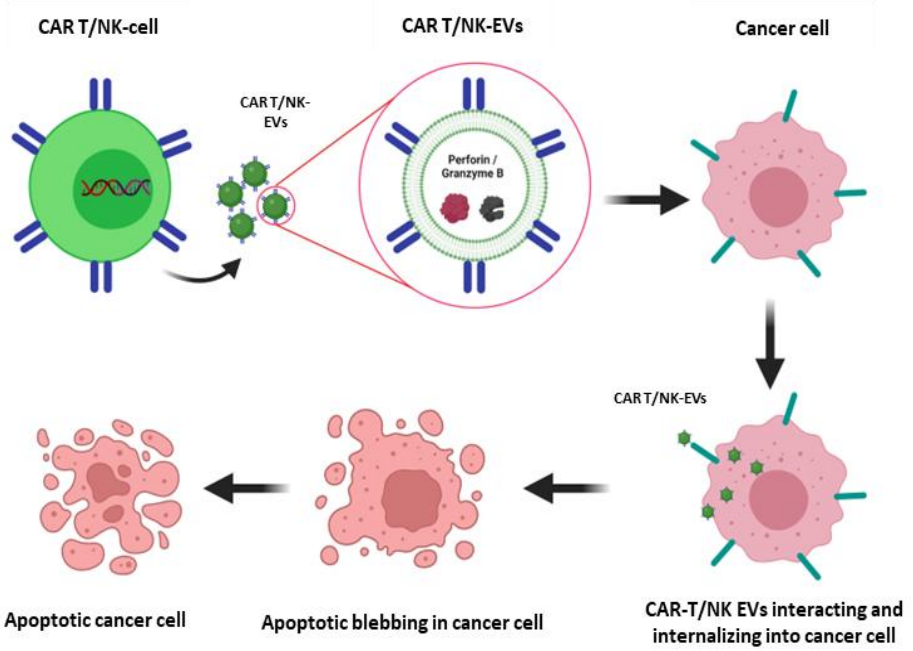
Cancer-killing CAR-Exosomes | leveraging well established CAR-cell methods

CAR-EVs inherit the targeting and cytotoxic properties of their parent CAR-T or CAR-NK cells

- CAR-EVs are produced by CAR-T/NK cells
- CAR-EVs contains cytotoxic proteins (perforin, granzyme A,B,K FasL/TRAIL, granulysin, IFN-γ/TNF-α)
- CAR-EVs interact and internalise into cancer cell
- Cytotoxic proteins from CAR-EVs induce cancer cell death (apoptosis)

CAR-EVs for drug delivery

- Chemotherapy, peptides and RNAs or combination therapy



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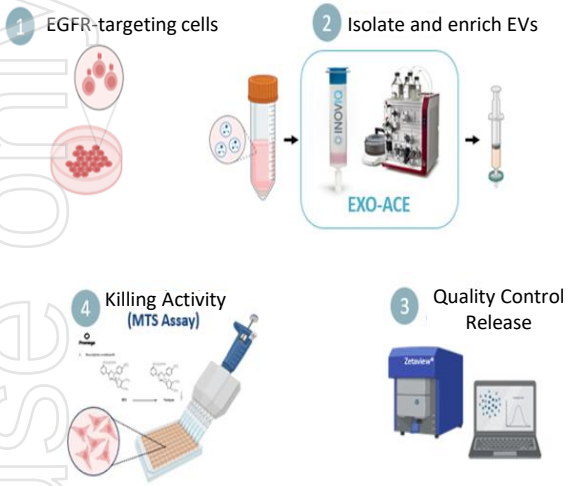
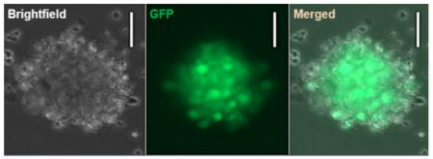
EGFR-targeting Exosomes| *In vitro POC* data

EGFR-targeting Exosomes (EVs)

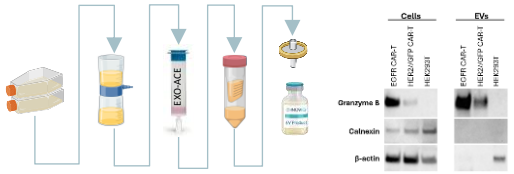
Immortalized NK cells



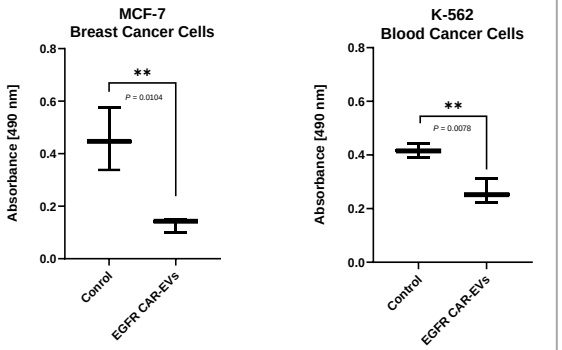
CAR-EV generation, enrichment, EV characterisation and functional readout



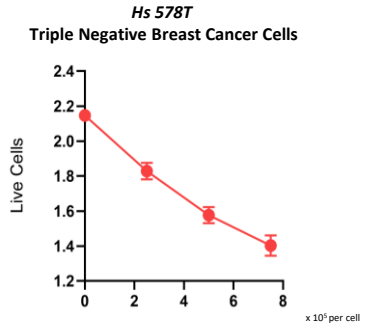
NK cells successfully transduced with CAR to target cancer cells



CAR-EVs isolated using proprietary technology for therapeutic use



EGFR-targeting EVs kill blood and solid tumours



EGFR-targeting EVs kill TNBC

Poster presentation Asari et al., ISSCR Copenhagen Oct 2024

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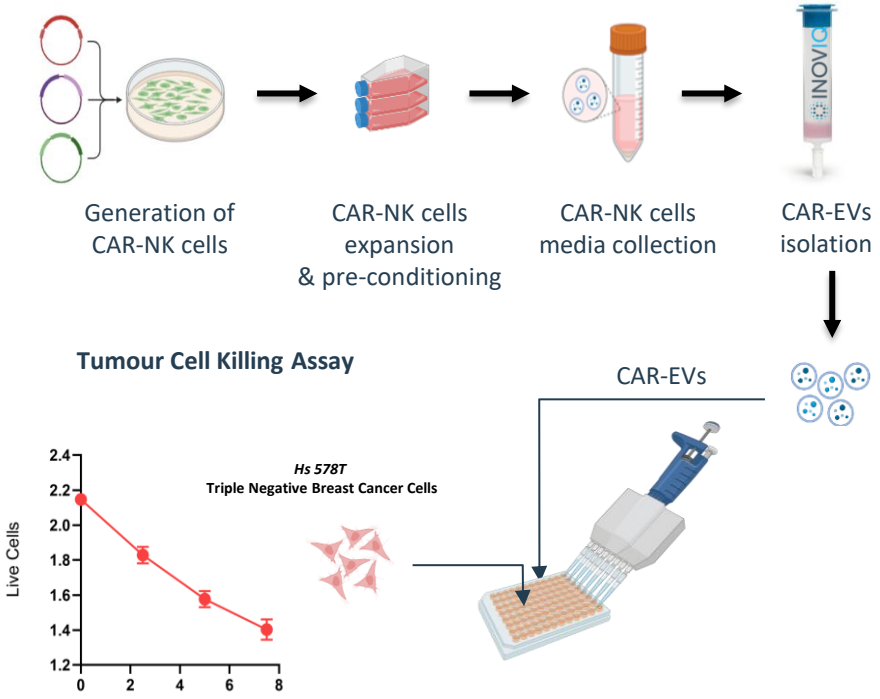
CAR-NK-EVs| Planned *in vitro* study to evaluate anti-tumour efficacy

Objective

- Evaluate anti-tumour efficacy of CAR-EVs derived from immortalized human CAR-NK cells on triple negative breast cancer cells.

Methods

- Engineer human EGFR-CAR-NK92 cells
- Expand CAR-NK cells
- Isolate, purify and characterise CAR-EVs
- Treat TNBCs (Hs 578T) with CAR-EVs + appropriate controls
- Evaluate dose and time effects of CAR-EVs on TNBC viability



In vitro study -In collaboration with Peter Mac: Evaluation of anti-tumour efficacy of CAR-NK-EVs

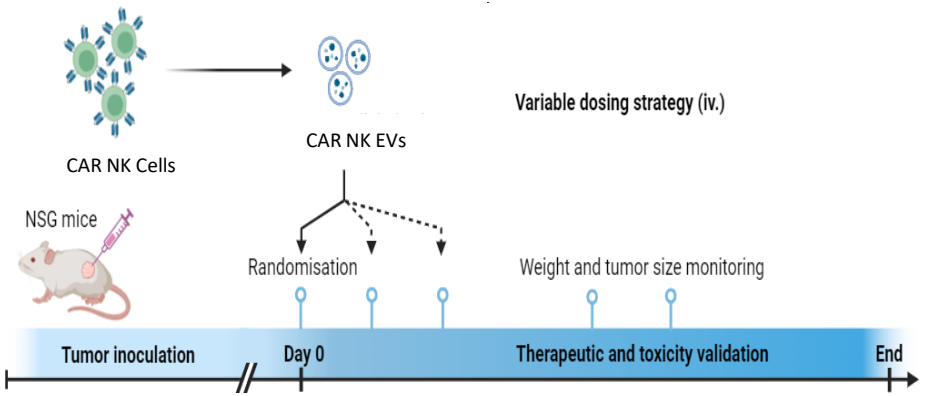
CAR-NK-EVs| Planned *in vivo* study to evaluate anti-tumour efficacy in mouse model

Objective

- Evaluate anti-tumour efficacy of CAR-NK EVs on a TNBC – immunodeficient mouse model (CDX)

Methods

- NSG mouse model MDA-MB-231
- Evaluate dose and time effects of CAR-EVs (and appropriate controls) on tumour volume.

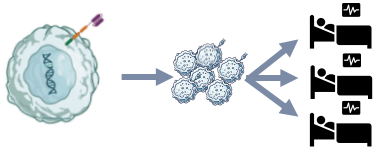


In vivo study in collaboration with Peter Mac: Evaluation of anti-tumour efficacy of CAR-NK-EVs

CAR-Exosomes| **Allogeneic** EV-based therapy with multiple advantages

Engineer immortalized CAR-cells → Establish Master Cell Bank → Activate and expand → Isolate EVs → In vitro efficacy → In vivo animal studies → IND → Phase I/II Clinical Trials

- ✓ **Improved safety profile** due to reduced GvHD (immune rejection), CRS & secondary tumours as EVs don't replicate in the body
- ✓ **Improved efficacy** in solid tumours due to ability to infiltrate TME based on nano-size (10^{-9})
- ✓ **Multiple doses** and/or CAR-T follow-on or combination therapy
- ✓ Continuous manufacturing from immortalised cells enables **off-the-shelf** (allogeneic) therapy for any patient
- ✓ Fast patient logistics and time-to-dose of ~**1 week**
- ✓ **Reduced manufacturing** and supply chain costs
- ✓ **Lower treatment cost** benefiting patients & healthcare system



Unmet clinical needs for CAR-EV therapy

- Cancers for which there are no approved targeted therapies (TNBC, Ovarian Cancer)
- Cancers where Cell Therapy has limited access (glioblastoma)

GvHD = graft versus host disease; CRS = cytokine release syndrome; TME = tumour microenvironment

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Cancer-killing Exosomes| Development path

CAR-T / NK Cell Development

- ✓Master cell banks established
- ✓**Cells engineered with CARs**

EXO-ACE CAR EV Isolation

- ✓**High purity & yield of CAR-EVs**
- ✓Scalable EXO-ACE EV isolation process

In Vitro Studies

- ✓In vitro PoC for **CAR-T-EVs** in BC cells
- ✓In vitro PoC for **CAR-NK-EVs** in TNBC cells

In Vivo Studies

- ✓Peter Mac collaboration to advance preclinical development
- ✓Preclinical *in vitro* & *in vivo* studies commencing **1H25**

IND Submission

Selection of CRO

Regulatory Approval and Site Selection

First Patient Dose

CAR-Exosome in vitro proof of concept (PoC) established (ASX: 3/6/24)

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Prof Phil Darcy| Peter Mac & INOVIQ Advisory Board member

- Co-leader of the Cancer Immunology program, Group Leader of the Cancer Immunotherapy Laboratory at the Peter MacCallum Cancer Centre and NHMRC Principal Research Fellow
- Focused on novel T cell-based immunotherapy approaches for cancer in preclinical mouse models and clinical translation

"My team has expertise in the preclinical development and clinical translation of novel immunotherapies for cancer, including CAR-T therapies. CAR-exosomes are a next-gen acellular therapy with potential safety and efficacy advantages over cell therapies for treatment of solid tumours. My lab is excited to add our expertise and capabilities in immunotherapy to support the preclinical development of INOVIQ's CAR-exosome therapy for triple negative breast cancer."

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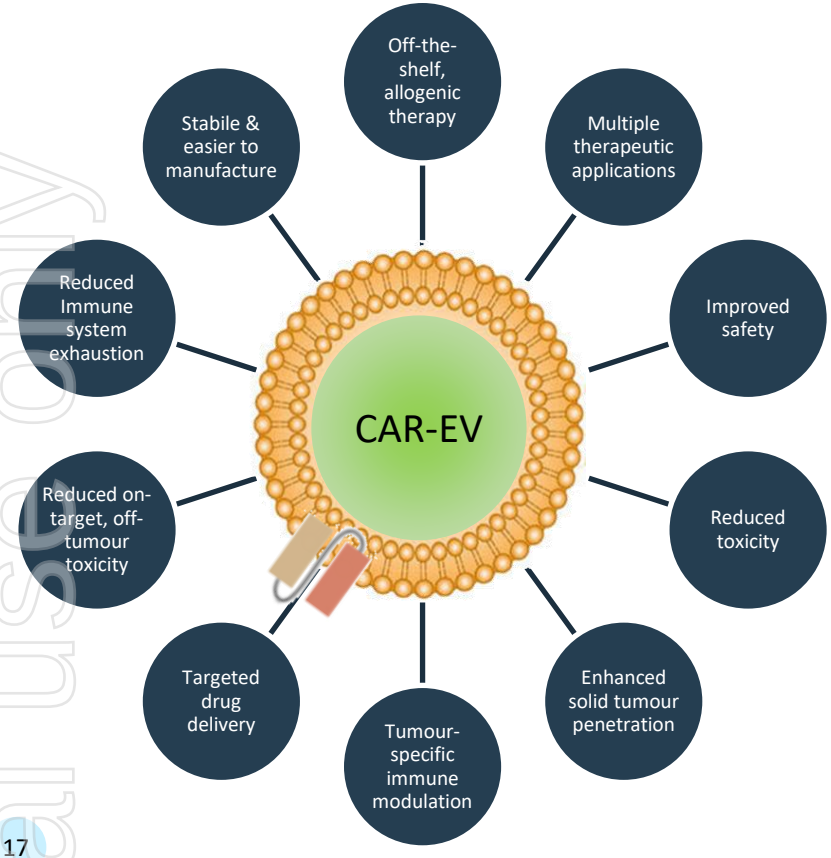
CAR-Exosome Therapy| Potent cancer killing and low toxicity



- **Next-gen cell-free therapy** to target and kill solid tumours
- **Versatile and flexible technology platform** with multiple therapeutic applications
- **Targeting specificity:**
  - EVs inherit targeting specificity (CAR) from parent CAR-NK cells
  - EVs lack PD-1 expression, avoiding suppression by tumour expressed PD-L1
- **Antitumour efficacy:**
  - NK-derived EVs deliver cytotoxic molecules (granzymes, perforin) to kill tumours
  - Drug-loaded EVs (chemotherapy, RNA) enhance tumour-killing efficacy and minimise off-target effects
- **Safety:** Reduced risk of immune rejection, cytokine release syndrome, CRES and GvHD
- **Durability:** Short-lived with transient activity, reducing risk of sustained immune activation or exhaustion

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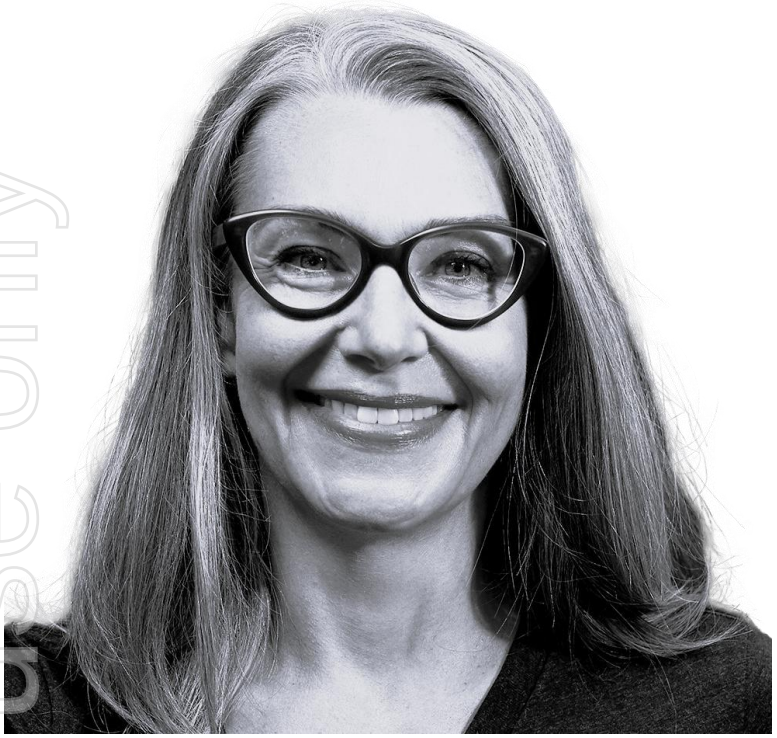
Dr Emma Ball| Chief Commercial Officer (commences 7 April 2025)



- Experienced biotechnology commercialisation executive with expertise in business development, licensing, and strategic partnerships across therapeutics, vaccines and diagnostics
- Non-Executive Chair of BioMelbourne Network
- Previous senior business development / licensing roles in multinational biotechnology companies CSL Ltd and Illumina Inc

"I am thrilled to be joining INOVIQ at such a pivotal time in the company's growth. I was drawn to INOVIQ's diverse portfolio of diagnostics, therapeutics and research tools, underpinned by its novel exosome technology platform. I will leverage my commercialisation and partnering expertise to accelerate development and accessibility of innovative diagnostics and therapeutics for cancer and other critical diseases."

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Exosome Therapeutics market and drug candidates

Exosome therapeutics market
US$32.0m to $1.4b (2029-2040)[1]
41.1% CAGR

CAR-T cell therapy market
US$4.3b to $61.1b (2024-2034)[2]

US$570m+ investment
120+ EV therapies in development: Oncology, Regenerative Medicine, Autoimmune & Neurology[1]

Breast Cancer statistics 2022
2.3m new cases pa & >25m survivors worldwide[3]
10-15% TNBC[4]

Drug	Company	Indication	Phase
CAP-1002	Capricor Therapeutics	DMD	Phase III
ExoFlo	Direct Biologics	ARDS	Phase III
Debamestrocel	BrainStorm Cell Therapeutics	ALS	Phase III
PEP-TISSEEL	Rion	Diabetic Foot Ulcers	Phase III
EXOMSC-COV19	Dermama Biotech Lab	ARDS	Phase II/III
Dex2	Gustave Roussy Institute	Cancer Immunotherapy	Phase II/III
SF-MSC-EX	Osmangazi University	COVID-19 Pneumonia	Phase II/III
AGLE-102	Aegle Therapeutics	Epidermolysis Bullosa, Diabetic Ulcers	Phase I/II
MSC-Exosomes	Multiple Institutions	Rectal Cancer, AML	Phase I
KRAS G12D siRNA	Mesenchymal Stromal Cells	Pancreatic Cancer	Phase I
VL-PX10	Vitti Labs	Neurodegenerative Diseases	Preclinical
AB126	Aruna Bio	Acute Ischaemic Stroke	Preclinical
EV101	EV Therapeutics	Colorectal Cancer	Preclinical
COYA 201	Coya Therapeutics	ALS	Preclinical

1. Exosome Therapy Market, Size, Growth, Trends, Share, Forecast (2040); 2. CAR T-cell Therapy Market Size, Growth Outlook 2025 - 2034 ; 3. Cancer Today: Breast Cancer incidence 2022; 4. Triple-negative Breast Cancer | Details, Diagnosis, and Signs | American Cancer Society

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Exosome & cell therapy deals

Acquirer / Licensee	Target / Licensor	Date	Deal Type	Stage	Upfront (US$m)	Milestones (US$m)	Total Deal Value (US$m)	Cell Source
Roche	POSEIDA THERAPEUTICS	2024	Acquisition	Phase 1	$1,038	$462	$1,500	T cell
AstraZeneca	GRACELL	2023	Acquisition	Phase 1b	$1,000	$200	$1,200	T cell
Roche	POSEIDA THERAPEUTICS	2022	Research Collaboration & Licence	Phase 1	$110	$110	$220	T cell
Takeda	Carmine THERAPEUTICS	2022	Research Collaboration & Option	Preclinical	Undisclosed	$900	$900	EV
Athenex	»kuur THERAPEUTICS	2021	Acquisition	Phase 1	$70	$115	$185	iNKT cell
Lilly	evox	2020	Research Collaboration & Licence	Preclinical	$20	Undisclosed	$1,200	EV
Takeda	evox	2020	Research Collaboration & Licence	Preclinical	$44	$838	$882	EV
SAREPTA THERAPEUTICS	CODIAK	2020	Research Collaboration & Option	Preclinical	$73	Undisclosed	$1,100	EV
Jazz Pharmaceuticals	CODIAK	2019	Research Collaboration & Licence	Preclinical	$56	$1,000	$1,056	EV
Roche	PURETECH GIVING LIFE TO SCIENCE	2018	Research Collaboration & Licence	Preclinical	$36	$1,000	$1,036	EV

Q&A

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