### Company overview

November 2024



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QBiotics Group: mission & overview Harnessing the power of nature to improve lives

Australian public unlisted life sciences company

#### Two assets in human clinical development:

- Tigilanol tiglate (TT) in Phase II development for multiple solid tumours Soft tissue sarcoma (FDA Orphan Drug Designation) Head & neck cancer
- 2. EBC-1013 in Phase I development for wound healing



Tigilanol tiglate (veterinary formulation): STELFONTA<sup>®</sup> commercially approved to treat canine mast cell tumours

Discovery programmes in antibiotics and anti-inflammatories



# Three key pillars drive scientific discovery from nature & development of novel drug candidates

~45% of all marketed pharmaceuticals are based on small molecules discovered from nature



Nature has remarkable chemical diversity unmatched by synthetic chemistry

Mainstream discovery programmes rely on limited number of validated disease targets Our platform provides greater opportunity for discovery of novel molecular structures and new modes of action



#### QBiotics' innovative approach to business Veterinary to human validation- derisks our human programmes





### Robust clinical pipeline in human disease, supported by validation in veterinary programmes

Human disease programmes									
Drug candidate	Therapeutic area	Indication	Discovery	Preclinical	Phase I	Phase II	Phase IIb/III	Approval	Programme updates
Tigilinol	Oncology	Soft tissue sarcoma (STS)					FDA: Orphar Designation	n Drug granted	QB46C-H07: Phase IIa Preliminary data: ESMO & CTOS 2024 Full results in Q1 CY2025
tigiate		Head & neck cancers (H&NC)							QB46C-H08: Phase IIa Recruiting
EBC- 1013	Wound healing	Venous leg ulcers							QB1013C-H201- Phase I Recruiting
Several	Novel antibiotics	6							Lead optimization
leads	Anti-inflammatory								Lead optimization

Veterinary programmes					
Drug/ drug candidate	Therapeutic area	Indication	Clinical	Approval	Programme updates
STELFONTA®		Canine: mast cell tumours			Marketed EU, USA, UK, AU
Tigilipal tiglata	Oncology	Canine: soft tissue sarcoma, oral melanoma			Recruiting
rigillitor ligiale		Equine: sarcoid, melanoma			Sarcoids reporting, melanoma recruiting
EBC-1013	Wound healing	Equine & canine: acute & chronic wounds			Recruiting

QBiotics Group

CTOS: connective tissue oncology society, ESMO: european society of medical oncology

### Tigilanol tiglate in oncology



# Tigilanol tiglate: a novel epoxytigliane with potential to treat a wide range of solid tumours



Molecular structure

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Mode of action

• Unique & multifactorial:

(MoA)

- Rapid tumour destruction
- Vascular disruption
- Immunogenic cell death
- Anti-tumour immunity

#### Efficacy & safety

- Tumour responses observed in Phase I studies across 9 tumour types
- Promising CR/PR tumour responses in Phase II STS
- Minimal scarring
- Well-tolerated safety profile



### Regulatory & commercial

- FDA has granted Orphan Drug Designation in STS
- Commercial supply established
  - ✓ low COGs
  - ✓ high stability
- Approved product for canine mast cell tumours: STELFONTA<sup>®</sup>



- Potential across multiple solid tumours, including internally & externally located tumours
- Potential for use in combination with a range of existing therapies:
  - Checkpoint inhibitors
  - Conventional chemotherapies
  - Surgery
  - Radiation therapy
- Solid tumours represent a large unmet need



COGs: cost of goods , CR: complete response, PR: partial response, STS: soft tissue sarcoma

### Tigilanol tiglate: Mode of action





# Tigilanol tiglate's multifactorial mode of action provides strong differentiation



Tigilanol tiglate is a Protein Kinase C activator, but can also affect other targets<sup>1</sup>

- A. Local response: Tigilanol tiglate induces rapid tumour destruction by vascular disruption, tumour cell oncolysis and inflammation within 5-7 days, followed by rapid healing of site.
- B. Systemic response: Tumour cell death induces immunogenic cell death and systemic anti-tumour immunity.





# Injected tumour responses: tumour cell death, tumour vasculature disruption & inflammation





# CD8<sup>+</sup> T cells play a role in tigilanol tiglate induced anti-tumour responses in vivo



- AH-1 peptide + AH-1 peptide

Tigilanol tiglate induces tumour-specific CD8<sup>+</sup> T cells

Tigilanol tiglate induces functional CD8<sup>+</sup> T cell responses in re-challenged mice



Cullen et al 2024. Journal for Immunotherapy of Cancer, 12(4).

# Tigilanol tiglate induced anti-tumour T cells protect against distal and recurrent tumour growth





# STELFONTA® (tigilanol tiglate): monotherapy validation in veterinary setting

### Significant datasets in canine mast cell tumour (MCT) with impressive efficacy



- 75% CR with a single IT treatment (p<0.0001 vs sham control)<sup>1</sup>
- Objective tumour response rate (CR/PR) of 80%
- 87% CR with second treatment for partial responders
- No tumour recurrence in 93% of evaluable cases at 84 days and 89% at 12 months.



Successfully commercialised across key markets



Approved as a first-line, alternative to surgery, veterinary pharmaceutical treatment for canine MCT.

- >20,000 dogs treated to date
- Global supply chain, marketing and distribution network with partner Virbac
- Regulatory, CMC and commercial validation



1 QBiotics Study Report PN1894. RECIST v1.1 applied to injected tumour. Published by De Ridder T. et al (2020). 2 Jones et al., 2021 CMC: chemistry, manufacturing and controls, CR: complete response, IT: intratumoural, PR: partial response

necrosis

### Tigilanol tiglate: Human clinical studies





# Phase I trial enrolled patients across 9 tumour types in escalating dose study



Primary endpoint: establish safety, tolerability and maximum tolerated dose (MTD)

Secondary endpoints: Preliminary efficacy and pharmacokinetics

Characteristics of 22 patients: range of cutaneous, subcutaneous and nodal tumours



Stage of tumour	# (%) of patients
Stage I	2 (9%)
Stage II	5 (23%)
Stage III	4 (18%)
Stage IV	7 (32%)
Unknown	4 (18%)

Trial ID: QBC46C-H01, Panizza B. et al. EBioMedicine, 50(2019). 433 - 441

AMF: atypical myxoid fibrosarcoma, AC: adenocarcinoma, ACC: adenoid cystic carcinoma, AF: atypical fibroxanthoma, BCC: basal cell carcinoma, ECOG: Eastern coorperative oncology group comparison scale SCC: squamous cell carcinoma



# Well-tolerated safety profile, intratumoural injection limits systemic exposure

### 96% of adverse events (AE's) were mild to moderate

- Total AEs were generally mild (Grade 1 and 2), related to the local action of tigilanol tiglate (e.g., local pain, swelling, necrosis, oedema)
- No deaths. No Grade 5 AEs
- Most common TEAEs were injection site pain and injection site reactions (n=74). Grade 2 in five patients, Grade 3 in two patients

Pharmacokinetics: tigilanol tiglate has minimal systemic exposure and rapid clearance



- Plasma concentrations rapidly decline within 2-4 hrs post injection
- Cmax 237ng/ml- 8.16mg received: dose dependent and dose proportional
- Tmax 15 minutes- negligible at 24 hrs
- MTD not declared at max dose of 3.6mg/m<sup>2</sup>



# Strong monotherapy results from single injection of tigilanol tiglate across different tumour types



Tumour responses in all 9 tumour types 20 of 22 patients had tumour responses: 4 CR, 3PR, 13 SD

Table represents tumour responses from 6 patients

Response at full treatment rate (100% tumour treated)	%
Complete tumour response (CR)	50%
Local tumour control (CR/PR/SD)	100%

Patient Dose: tigilanol tiglate dose escalation based on body surface area

Tumour dose: 0.5 mg tigilanol tiglate/ 0.5 cm<sup>3</sup> of tumour volume

Trial ID: QBC46C-H01, ^, #, ~ = two or three tumours treated per patient, \*= highly ulcerated tumour and leakage of TT, so full treatment rate not administered, Panizza B. *et al. EBioMedicine*, 50(2019). 433 - 441 AMF: atypical myxoid fibrosarcoma, AC: adenocarcinoma, ACC: adenoid cystic carcinoma, AF: atypical fibroxanthoma, BCC: basal cell carcinoma, CR: complete response, PR: partial response, SCC: squamous cell carcinoma, SD: stable disease



# Responses in metastatic melanoma including abscopal responses in distil tumours



Pre-treatment



**Day 1:** 30 mins: tumour necrosis



Day 8: Non-injected,Day 35: CF4th tumour regressesinjected tur

#### Case study 2: Metastatic melanoma



Day 35: CR in the noninjected tumour

#### Single IT injection

- Into top 3 tumours 4th tumour (circled) not treated
- Abscopal response in lung & sternum tumours reported

#### Case study 3: Metastatic melanoma – failed multiple surgeries



Pre-treatment



Day 2: Tumour necrosis



Day 29: Complete response



24 months: Patient tumour free

Single IT injection into 2 tumours in axila Abscopal response in:

- Nodal deposit and leg melanoma both cleared
- Patient clinically and ultrasound clear at 33 months post-treatment



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Panizza B. et al. EBioMedicine, 50(2019). 433 – 441

### Tigilanol tiglate development in Soft Tissue Sarcomas (STS)



### STS is a heterogenous cancer with high unmet need

#### 80-100 Histologically diverse subtypes







~75% of STS cases: in the extremities such as arms and legs

Trunk wall and retroperitoneum account for 10% cases

#### Patient segmentation at diagnosis:

70% patients have localised/ resectable disease

• Out of these, 75% of resected progress to advanced/ unresectable disease

30% are initially diagnosed with unresectable, advanced metastatic disease



#### Advanced STS cancers have few treatment options

Due to diversity of subtype, STS is a tough disease to diagnose and treat



Chemotherapy: only few drugs approved, all with low response rates, low duration of response and severe side effects<sup>2</sup>



### Phase IIa trial in human STS completed recruitment

Single center, single arm, open label, Phase II study assessing preliminary efficacy of tigilanol tiglate in STS patients conducted at Memorial Sloan Kettering Cancer Centre

- Adults with advanced and/or metastatic STS with tumours accessible for injection with ECOG PS  $\leq 2$
- Lesion(s) volume measured by ultrasound (+CT or MRI)



Trial ID: QB46C-H07, NCT05755113 AE: adverse event, BSA: body surface area, CT: computed tomography, ECOG PS: Eastern cooperative oncology group performance scale, MRI: magnetic resonance imaging, PBMCs: peripheral blood mononuclear cells, PK: pharmacokinetics, Q4W: every 4 weeks, SAE: serious adverse event, STS: soft tissue sarcoma



# Early data from trial supports strong safety profile in patients across different sarcoma types

Baseline demographics and disease characteristics:

Characteristic	Patients <sup>1</sup> N=11
Sarcoma histologic type	
Leiomyosarcoma	4
Myxofibrosarcoma/ UPS	3
Myxoinflammatory fibroblastic sarcoma	1
Extraskeletal Osteosarcoma	1
Angiosarcoma	1
Sarcoma NOS	1
Clinical disease status	
Recurrent/ locally advanced	6
Distant metastases	5
Prior resections, median (range)	3 (0-9)
Prior radiation	8
Prior lines of systemic therapy, median (range)	3 (0-5)

Common adverse events: most patients with Grade 1-2 mild AEs

Adverse events (AEs)	N=1	11
Grade ≥ 3 AEs	1	
AEs leading to discontinuation	0	
AEs in ≥ 2 patients	Grade 1-2	Grade 3
Injection site wound	8	0
Pain at injection site	8	0
Injection site infection	3	1
Odor at injection site	4	0
Drainage at injection site	2	0
Flushing	4	0
Fever	3	0
Bleeding	2	0

Intratumoural TT appears safe for patients with STS

1 11 patients were enrolled, one was lost to follow up and was replaced

Trial ID: QB46C-H07, NCT05755113, Bartlett et al, ESMO 2024 1736P, Preliminary data presented at ESMO 2024 by principal investigator from Memorial Sloan Kettering Cancer Centre, subject to final analysis UPS: undifferentiated pleomorphic sarcoma, NOS: not otherwise specified



### Promising early efficacy:10 tumours with CR



28 Days Post Tx

14 Days Post Tx

Baseline

Injected tumour responses were observed across numerous STS histologic types, exceeding the primary endpoint for a promising response

#### Response rates at 4 weeks:

In each injected lesion: 10 CRs, 8 PRs, 2 SD, 5 PD for each tumour

In injected lesion(s) per patient: 7 out of 10 patients had response  $\geq$  30%



Trial ID: QB46C-H07, NCT05755113, Bartlett et al, The Connective Tissue Oncology Society (CTOS annual meeting, Nov 13-16, 2024, San Diego, USA. Preliminary data presented by principal investigator from Memorial Sloan Kettering Cancer Centre, subject to final analysis UPS: undifferentiated pleomorphic sarcoma, NOS: not otherwise specified

72 Days Post Tx



### Tigilanol tiglate development in Head & Neck Squamous Cell Carcinoma (HNSCC)



# HNSCC is a common cancer where overall survival is a high unmet need



- Head and neck cancer is the 7<sup>th</sup> most common cancer
- ~ 932,000 new cases globally in 2020<sup>1</sup>
- Extending overall survival remains a major unmet need

#### Opportunity

- HNSCC market ~\$US2.1B in 2020<sup>2</sup>
- CAGR of 9.8%
- Sales of \$5.2 B by 2030
- No intratumoural product is approved
- Opportunity to preserve organ function & improve cosmetic outcomes
- Combination with Standard of Care



# Advanced and refractory/ metastatic HNSCC patients have few treatment options



- Standard of care is surgery and chemoradiation
- Surgery is complex due to the need to preserve vital organ function
- Competitive landscape: most agents in early-stage development focused on cell signalling targeted therapies, cancer vaccines and other immuno-oncology mechanisms



#### Phase II open label study: recruitment underway

Multi center, single arm, open label, Phase II study assessing efficacy of tigilanol tiglate in various head and neck cancer malignancies

- Adults with advanced and/or metastatic head and neck cancer
- Lesion(s) volume measured by ultrasound (+CT or MRI)



- PBMC's

Trial ID: QB46C-H08, NCT05608876

AE: adverse event, BSA: body surface area, CT: computed tomography, MRI: magnetic resonance imaging, ORR: objective response rate, PBMCs: peripheral blood mononuclear cells, PK: pharmacokinetics, Q4W: every 4 weeks, QoL: Quality of Life, RECIST: response evaluation criteria in solid tumours, SAE: serious adverse event, STS: soft tissue sarcoma





### EBC-1013 in wound healing



#### EBC-1013: Multi-faceted mode of action in wound healing



Cell signalling with multifactorial MoA affecting different stages of the wound healing process



Low competition (Pharmaceutical, not a device)

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Potentially suitable for treating a wide range of chronic and acute traumatic wounds, including burns

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Initial proof of concept of topical gel formulation from exploratory veterinary clinical case studies of difficult to treat wounds



First-In-Human Phase I safety trial currently recruiting in patients with venous leg ulcers





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### EBC-1013 for chronic and acute wounds and burns

6.5 million US chronic wounds p.a.<sup>1</sup> 14-29 million globally p.a.<sup>2</sup>

Driven by ageing and increasing incidence of diabetes and obesity



Current treatments - advanced wound dressings and medical devices, only one wound healing pharmaceutical product Regranex (Becaplermin) approved in US



Significant unmet need: 10% of chronic wounds do not heal



Large failure rate; objective clinical endpoint = complete wound closure at 84 days

1. Hurlow et al, Defying the Recalcitrant Wound, Woundsource.com, Sponsored by ConvaTec. 2. Nussbaum et al, An Economic Evaluation of the Impact, Cost, and Medicare Policy Implications of Chronic Nonhealing Wounds. Value Health, 2018 Jan;21(1):27-32.



# EBC-1013 gel application has a multi-faceted mode of action in wound healing

#### Inflammatory and antimicrobial response



#### Wound resolution



### Reason to believe: veterinary case studies of treatment with EBC-1013 gel show clear efficacy

#### Chronic non-healing wound of 5 months in greyhound resolved in 1 month with single EBC-1013 application

Post wound formation



Day 154 Day 5

Post single application of EBC-1013 gel (0.3 mg/ml)



Day 0

#### Equine traumatic penetrating wound (1 gel application)



Day of wounding



**Treatment Day** (Infected wound 5 days after trauma)



5 days after treatment



**Treatment Day 1** (8 days after burn)



Day 14



**Day 38** 

Canine thermal burn (3 treatments, 7 days apart)



Day 73



# Phase I study recruiting patients across escalating doses of EBC-1013

A phase I first-in-human multi-centre dose escalation study to assess the safety and tolerability of EBC-1013 gel in participants with venous leg ulcers.

Single application of EBC-1013 gel or placebo at ascending doses

Venous leg ulcers

Up to 35 adult patients Wound duration: 3-48 months Size: 2.5 cm<sup>2</sup>- 70 cm<sup>2</sup> Venous origin confirmed 1.5 mg/g EBC-1013 gel or placebo gel

1.0 mg/g EBC-1013 gel or placebo gel

0.6 mg/g EBC-1013 gel or placebo gel

0.3 mg/g EBC-1013 gel or placebo gel

0.1 mg/g EBC-1013 gel or placebo ge

Follow up: D1, 3, 7, 14 and 28

Primary endpoint: safety and local tolerability

Secondary endpoint: Systemic exposure, anticipated therapeutic dose range



## QBiotics: financial overview and upcoming milestones



