RACURA ONCOLOGY

ASX Announcement

Racura Oncology & Purdue University Partner to Explore G4 DNA Binding & MYC Silencing by (E,E)-bisantrene

- **Collaborative preclinical program led by Professor Danzhou Yang, an internationally recognised expert in G-quadruplex (G4) DNA structural biology and MYC gene expression regulation**
- **Provides Racura with access to Purdue University's high-resolution NMR and X-ray expertise to elucidate the structural basis for how (E,E)-bisantrene silences MYC transcription**
- **Program supports Racura's strategic MYC-focused oncology initiatives and is expected to generate robust mechanism of action data for the anticancer activity of (E,E)-bisantrene.**

26 March 2026

Racura Oncology Limited ("Racura") is pleased to announce that it has commenced a research collaboration with Purdue University (West Lafayette, IN, USA) to study the molecular mechanisms by which (E,E)-bisantrene binds to G-quadruplex (G4) DNA structures within the MYC gene promoter (MYC-G4) to suppress MYC transcription in cancer.

Racura Oncology Vice President of Research, Professor Michael Kelso commented: *"Racura is thrilled to be working with Prof Yang and her team of experts in the structural biology and biochemistry of MYC-G4 at Purdue. Together we will generate a rich data set that expands our knowledge of (E,E)-bisantrene's anticancer mechanism of action via MYC silencing."*

Purdue University, Professor Danzhou Yang commented: *"I'm truly excited to partner with Racura on this important project and on the promising anticancer drug (E,E)-bisantrene. By uncovering structural and mechanistic insights into how (E,E)-bisantrene engages the MYC G-quadruplex to regulate MYC expression, my team and I hope to generate high-impact findings that will advance both the scientific understanding and therapeutic development of this compelling anticancer agent."*

Professor Yang is a global leader in G-quadruplex structural biology, with a particular focus on MYC-G4. Her group has employed advanced structural and biophysical techniques to study how small molecules

interact with G4 DNA at high resolution and was the first to determine the X-ray crystal structure of the MYC-G4/nucleolin complex, published in the prestigious journal *Science* in 2025.[1]

The MYC oncogene is a key regulator of cancer cell growth and proliferation and is overactive in up to 70% of cancers.[2] Despite its importance, MYC has proven very difficult to target directly with small-molecule drugs. Importantly, the MYC gene contains a specialised DNA structure in its promoter region known as a G-quadruplex, or G4.[3] This structure acts as a regulatory element that controls MYC transcription. Stabilisation of this DNA structure can repress MYC gene transcription and MYC oncogenic signalling, producing a pharmacological effect equivalent to inhibition of the MYC protein.[4]

Racura has identified that (E,E)-bisantrene can silence MYC gene expression in cancer cells. Early data from research conducted at Purdue have confirmed that (E,E)-bisantrene binds directly to the MYC-G4, forming a 2:1 (E,E)-bisantrene:MYC-G4 complex (Figure 1).

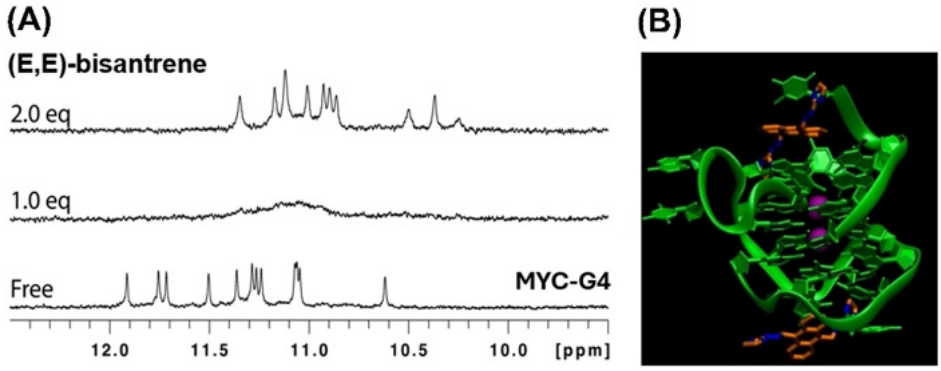


Figure 1. (A) ^{1}H Nuclear magnetic resonance (^{1}H NMR) titration of (E,E)-bisantrene with MYC-G4. One mole equivalent (1.0 eq) of (E,E)-bisantrene forms multiple low-abundance species and loss of the MYC-G4 ^{1}H NMR signals. Two molar equivalents (2.0 eq) of (E,E)-bisantrene form a stable 2:1 (E,E)-bisantrene:MYC-G4 complex. Conditions: [KCl] = 100 mM, [KPi] = 25 mM, pH 7.0, 25 ˚C. **(B)** Molecular model of (E,E)-bisantrene binding to the MYC-G4 structure in a 2:1 complex.

The research collaboration with Purdue University will cover the following:

- Molecular level studies on how (E,E)-bisantrene binds to the MYC-G4 DNA structure using a range of complementary techniques.
- How MYC-G4 binding affects regulatory proteins influencing MYC transcription.
- How the molecular interactions between (E,E)-bisantrene and MYC-G4 silence MYC gene transcription.
- High-resolution structural studies to characterise (E,E)-bisantrene binding with MYC-G4.

Results from this research collaboration will emerge over the next 24 months and are expected to be published in a high-impact international journal. The data generated will be shared with potential pharmaceutical partners, providing independent verification of studies undertaken by Racura scientists.

References

1. Chen L, Dickerhoff J, Zheng KW, et al. Structural basis for nucleolin recognition of MYC promoter G-quadruplex. Science. (2025) 388(6744)
2. Dang CV. MYC on the path to cancer. *Cell*. (2012) 149(1):22-35.
3. Hurley LH, Von Hoff DD, Siddiqui-Jain A, Yang D. Drug targeting of the c-MYC promoter to repress gene expression via a G-quadruplex silencer element. *Semin Oncol.* (2006) 33(4):498-512.
4. Balasubramanian S, Hurley LH, Neidle S. Targeting G-quadruplexes in gene promoters: a novel anticancer strategy? *Nat Rev Drug Discov.* (2011) 10(4):261-75.

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About Racura Oncology

Racura Oncology (ASX: RAC) is a Phase 3 stage clinical biopharmaceutical company with a mission to silence cancer.

Racura's lead asset, (E,E)-bisantrene, is a small molecule anticancer agent that primarily functions via G4-DNA & RNA binding, leading to potent silencing of the important cancer growth regulator MYC. (E,E)-bisantrene has demonstrated therapeutic activity in cancer patients with a well characterised safety profile. Recent discoveries made by Racura have enabled composition of matter IP filings that provide for 20 years of patent protection over (E,E)-bisantrene.

Racura is advancing a proprietary formulation of (E,E)-bisantrene (RC220) to address the high unmet needs of patients across multiple oncology indications, with a Phase 3 clinical program in acute myeloid leukaemia (AML), a Phase 1a/b program in mutant epidermal growth factor receptor non-small cell lung cancer (EGFRm NSCLC), and a Phase 1a/b program in combination with the anthracycline doxorubicin, where we aim to deliver both cardioprotection and enhanced anticancer activity for solid tumour patients.

Racura Oncology has collaborated with Astex, Emory University, Purdue University, MD Anderson, Sheba City of Health, UNC School of Medicine, University of Wollongong, and University of Newcastle. Racura is actively exploring partnerships, licence agreements, or a commercial merger and acquisition to accelerate access to RC220 for patients with cancer across the world. Learn more at www.racuraoncology.com.

If you have any questions on this announcement, or any past Racura Oncology announcements please visit our Interactive Announcements page.

Racura encourages all investors to go paperless by registering their details with the Company's share registry, Automic Registry Services, at www.automicgroup.com.au.

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