

NEW ZEALAND—SINGAPORE BIOTECH IN FUTURE FOODS RESEARCH PROGRAMME

**INFORMATION
SESSION
9 DEC 2024**

OPENING KARAKIA

In Te Reo Māori (Māori language)

Tāwhia tō mana kia mau, kia māia
Ka huri taku aro ki te pae kahurangi, kei reira te oranga mōku
Mā mahi tahi, ka ora, ka puāwai
Ā mātau mahi katoa, ka pono, ka tika
TIHEI MAURI ORA

English translation

Retain and hold fast to your power, be bold, be brave
We turn our attention to the future, that's where the opportunities lie
By working together we will flourish and achieve greatness
Taking responsibility to commit to doing things right
Life force is alive

BEFORE WE BEGIN

We kindly request for all webinar attendees to:

1. Set your profile name using the format "*Name (Institution)*".
2. Wait till the Q&A section to raise questions.
3. Submit your questions using the Q&A function, or use the "Raise Hand" function if you would prefer to speak.
4. We will upload this slide deck on the A*STAR grant call website for your reference.

INFORMATION SESSION PROGRAMME

1. About A*STAR and MBIE
2. Briefing for Call for Proposals: “New Zealand-Singapore Biotech in Future Foods Research Programme”
3. Q&A

ABOUT A*STAR AND MBIE

Vision: A global leader in science, technology and open innovation

Mission: We advance science and develop innovative technology to further economic growth and improve lives

Integrate our capabilities and collaborate with the wider research community as well as other public sector agencies towards meaningful and impactful outcomes;

Create economic growth and jobs for Singapore

Contribute to societal benefits such as improving outcomes in healthcare, urban living, and sustainability

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT

Vision: To Grow Aotearoa New Zealand for All

Prosperous and
adaptable people,
sectors and regions

People are skilled
and engaged in safe
and fulfilling work

Informed consumers
and businesses
interacting with
confidence

Value is sustainably
derived from the
natural environment

A dynamic business
environment fostering
innovation and
international
connections.

We recognise that a strong economy is one in which we use the skills, knowledge and time of our people in conjunction with our natural resources, and financial and physical capital to improve the wellbeing of current and future generations. We develop policies and deliver core services to help New Zealand reach its full economic potential.

Our funding and support programmes aim to build a high-performing science and innovation system that will transform New Zealand into a more diverse, technologically advanced, smart nation.



**CATALYST
FUND**

Advancing global science partnerships
for New Zealand

The Catalyst Fund supports activities that initiate, develop and foster collaborations which take advantage of international science and innovation for New Zealand's benefit.

It uses a combination of contestable and negotiated mechanisms to fund international research proposals and engagements that will drive scientific excellence and deliver impact at a faster pace than could otherwise be achieved solely via domestic activities.

<https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/investment-funds/catalyst-fund>

**BRIEFING FOR CALL FOR PROPOSALS:
“NEW ZEALAND-SINGAPORE BIOTECH IN FUTURE
FOODS RESEARCH PROGRAMME”**

PROGRAMME OBJECTIVE

Research projects shall leverage the **complementary** research capabilities in Singapore and New Zealand to drive **transformative** advancements in the **future food industry of both nations**, through the development of **biotechnology** innovations that translate to **health and economic impact**.

DESIRED OUTCOMES OF SUCCESSFUL PROJECTS

Successful projects shall (in no particular order):

- Lead to research translation of project deliverables into the future food industry through IP licensing or spin-offs
- Develop technologies that enable scalable and sustainable production of future foods
- Deliver impact in human health and longevity through improvements in next-generation future food ingredients
- Deepen research collaborations between Singapore and New Zealand scientists with complementary research capabilities in future foods R&D
- Grow the future food industries of both countries through novel biotechnology innovations and expanded market access

RESEARCH FOCUS AREAS

Proposed projects must identify and address challenges in the research areas of “Health and Nutrition” or “Smart and Sustainable Processes”. Examples of challenge statements of interest include (but are not limited to):

1. Smart and Sustainable Processes

- Developing scalable food processing technologies to enhance taste, texture and nutritional quality in future food products
- Developing techniques for high-throughput optimization of food manufacturing / precision fermentation bioprocesses
- Optimising food processing technologies towards net-zero carbon and waste

2. Health and Nutrition

- Understanding the health impact of extended consumption of future foods
- Developing functional foods with enhanced nutritional properties that improve healthspan
- Understanding the gut-brain-immune axis and its implications for population health

*To encourage comprehensive proposals with higher translation potential, projects that include **applied consumer insights** (e.g. connecting local consumer preferences to regionalize future food development) and **food matrix** studies (e.g. impact of ingredient interactions on taste, texture and nutritional value of future foods) will be prioritized.*

DEFINITION OF FUTURE FOODS

Future foods are defined as innovative food products and ingredients (including alternative lipids, proteins, and carbohydrates) that employ **advanced biotechnology** solutions in the food manufacturing process (e.g. fermentation, cellular agriculture) to achieve **improved sustainability, accessibility, and nutritional profiles** compared to traditional food systems.

PROGRAMME PRIORITIES

- Proposed projects shall develop technologies at **intermediate Technology Readiness Levels (TRL) of 3-5** towards translational outcomes that **address current challenges in the future food industry in Singapore and New Zealand**.
- Proposals must describe the expected industry impact, including details of **follow-on plans for translation and commercialization of project deliverables** (e.g. IP licensing, spin-offs, etc.).
- Proposals should exhibit **significant novelty, strong industry demand, immediate translation potential and a viable business model**. Proposals must demonstrate **excellent, high-impact research** in areas of relevance and importance to Singapore's and New Zealand's economic, societal, or environmental wellbeing.
- Innovations in **advanced technologies** (e.g. artificial intelligence (AI), bioprocessing, genetic engineering) that are **well-positioned for industrial-scale applications** are highly desirable. Proposals should identify **expected regulatory hurdles** that may influence its industry translation outcomes and **potential ways to overcome them**.
- Collaborations with industry partners interested in the co-development and / or commercialization of project IP are highly desirable (though not mandatory).

FUNDING

New Zealand project teams may apply for up to **NZ\$ 3 million** (excluding GST) of funding from MBIE (through the Catalyst Fund) **over three years**

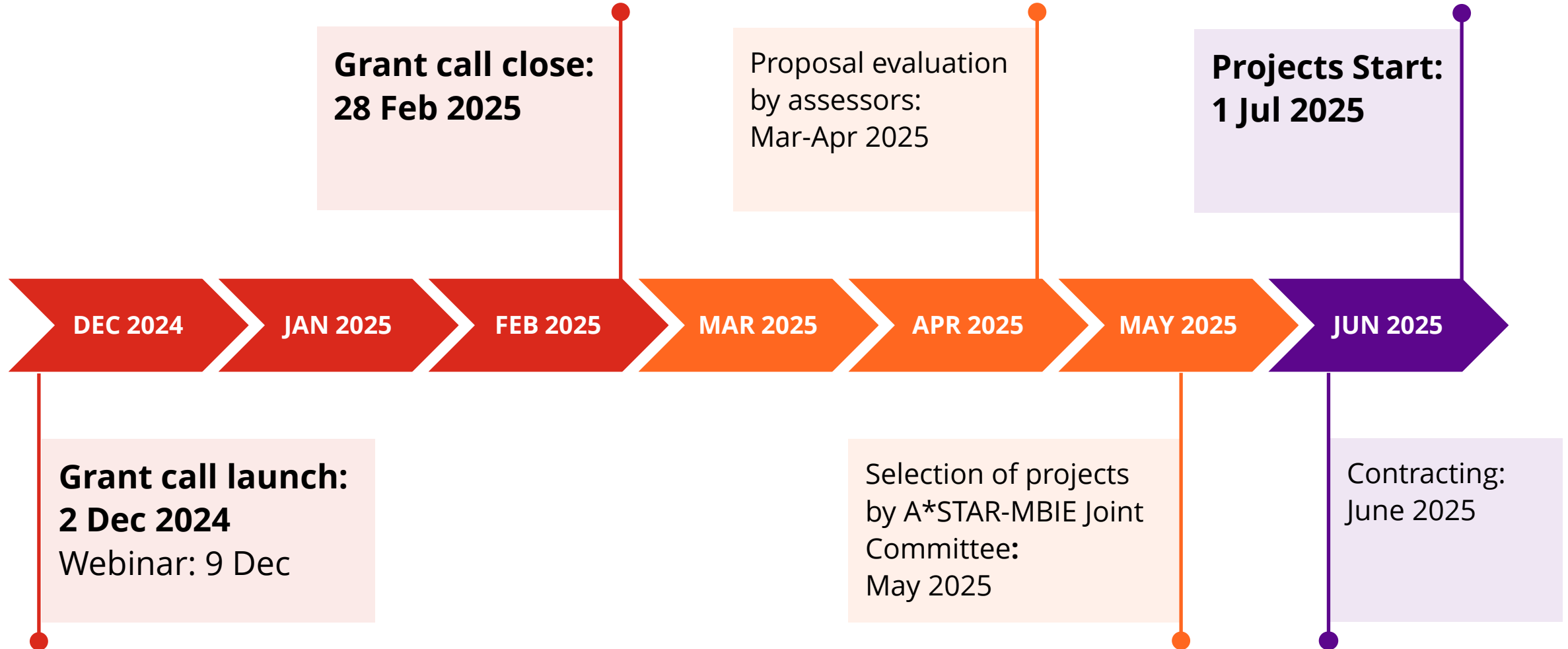
Singapore project teams may apply for up to **S\$ 1.25 million** (including overheads of 30%) from A*STAR **over three years**.

Each project team must have two separate budgets: one for the Singapore contribution and the other for New Zealand. Direct research costs (i.e. excluding overheads) on each side should be roughly equivalent.

ELIGIBILITY CRITERIA

- Proposals must be **jointly submitted** and involve **at least one New Zealand-based Principal Investigator (PI) and one Singapore-based PI**.
- New Zealand PIs must be employed by a New Zealand-based research organisation. Applications are open to both public and private New Zealand-based research organisations. However, proposals will be assessed against their public benefits and private organisations should clearly indicate how their proposal will benefit New Zealand.
- Singapore PIs must hold a primary appointment of at least 75% in a Singapore-based publicly funded institution and salaried by the institution. The Singapore project team and research activities may include self-funded industry contributions and partnerships.
- Proposals submitted for this Call must meet all eligibility criteria on page 8 of the Grant Call Guidelines document.

TIMELINE OF GRANT CALL



SUBMITTING YOUR PROPOSAL

Proposals must be **submitted via email to A*STAR (with MBIE in CC)** before **5 PM New Zealand Daylight Time (12 PM Singapore Standard Time)** on **28 February 2025**, using the proposal template provided on the websites for this Call.

The proposal must be submitted in Word or PDF format.

Address the submission email to A*STAR (A-STAR_FNCC@hq.a-star.edu.sg), and keep MBIE in CC (internationalscience@mbie.govt.nz).

The email should be sent by lead PI of either New Zealand or Singapore, while keeping the lead PI of the other country in CC. Only one email should be submitted for each proposal application.

For full submission guidelines, please refer to the grant call guidelines document.

CALL FOR PROPOSALS WEBSITES

A*STAR grant call page



MBIE grant call page



A*STAR: <https://www.a-star.edu.sg/Research/funding-opportunities/new-zealand-singapore-biotech-in-future-foods-research-programme>

MBIE: <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/investment-funds/catalyst-fund/new-zealand-singapore-biotech-in-future-food-research-programme-call-for-proposals-2025>

Please direct further queries to:

- NZ applicants: internationalscience@mbie.govt.nz
- SG applicants: A-STAR_FNCC@hq.a-star.edu.sg

LOOKING FOR COLLABORATORS?

Submit your name, institution, email, research capabilities and who you are looking to collaborate with to this form and receive access to a sheet of other interested parties searching for collaborators!



<https://forms.gle/FoA2wgpXCbo3wwNm8>

Use business contact information only.

Q&A

FAQ (1 / 4)

Question	Answer
Will I need to sign a Research Collaboration Agreement for this project after being successfully awarded?	An RCA is expected to be signed among all parties of the project team within the 1 st year of the project.
How may I identify potential collaborators to submit a proposal with?	You may submit your name and contact information using this form: https://forms.gle/FoA2wgpXCbo3wwNm8 The confirmation page after submission contains a live link to view everyone's business contact information. Please save this link for future reference.
Is an industry partner required in the proposal?	Collaborations with industry partners interested in the co-development and / or commercialization of project IP are highly desirable (though not mandatory). Researchers should identify suitable companies to work with and are encouraged to align their research to address relevant challenges in the future foods industry.
What is the eligibility criteria for proposal submissions?	Refer to page 8 of the Grant Call Guidelines document.

FAQ (2 / 4)

Question	Answer
What is the scope for proposed projects in this Call for Proposals? What are the priority research areas?	<p>Proposed projects shall develop technologies at intermediate Technology Readiness Levels (TRL) of 3-5 towards translational outcomes that address current challenges in the future food industry in Singapore and New Zealand.</p> <p>Proposed projects must identify and address challenges in the research areas of “Health and Nutrition” or “Smart and Sustainable Processes”.</p> <p>Refer to pages 3-5 of the Grant Call Guidelines document.</p>
What is the project duration?	Up to 3 years. See page 6 of Grant Call Guidelines document.
What funding is available?	Up to NZ\$3 million (excluding GST) from MBIE, and up to S\$1.25 million (including 30% overheads) from A*STAR, per project. See page 6 of the Grant Call Guidelines document.
What can the funding be used for?	Refer to page 7 of the Grant Call Guidelines document.

FAQ (3 / 4)

Question	Answer
What is the application process?	Refer to page 9 of the Grant Call Guidelines document.
What is the evaluation criteria for proposals?	Proposals will be assessed for its health and economic impact (40%), scientific excellence (30%), and connections established between Singapore and New Zealand (30%) See pages 14-15 of the Grant Call Guidelines document for more details of the evaluation criteria.
What are the commercialization or industry research spending expectations for this call?	There are no specific requirements for commercialization or Industry Research Spending (IRS). However, proposals should set relevant targets for patents, technology disclosures, and industry collaborations that reflect the expected industry impact of the project. The proposal should include details of follow-on plans for translation and commercialization of the project deliverables (e.g. IP licensing, spin-offs, etc.).
Which ingredients available from New Zealand / Singapore are prioritized in this grant call?	Project teams may propose working on ingredients of significant value to the future food industry that can deliver health and economic impact when commercialized.

FAQ (4 / 4)

Question	Answer
How important is consumer product acceptance in themes presented in this Call for Proposals?	Proposals are encouraged to include applied consumer insights (e.g. connecting local consumer preferences to regionalize future food development) as part of showing its impact on New Zealand's or Singapore's future food industry through translation of project outcomes.
Is this grant focused on just production of future foods or also on food safety aspects?	Food safety may be considered if it addresses current challenges in the future food industry, under the research areas of "Health and Nutrition" or "Smart and Sustainable Processes.
Are biorefinery approaches to value creation that include both future food and other applications for the biomass still in scope?	Innovations in advanced technologies (e.g. artificial intelligence (AI), bioprocessing, genetic engineering) that are well-positioned for industrial-scale applications are highly desirable. Proposals should focus on applications relevant to the future food industry.
What is the definition of future foods?	Future foods are defined as innovative food products and ingredients (including alternative lipids, proteins, and carbohydrates) that employ advanced biotechnology solutions in the food manufacturing process (e.g. fermentation, cellular agriculture) to achieve improved sustainability, accessibility, and nutritional profiles compared to traditional food systems.

OTHER QUESTIONS (1 / 6)

Question	Answer
I represent a New Zealand agri-business and am interested in this Call. Can I still apply?	Proposals must be led by a joint team comprising of a New Zealand PI and a Singapore PI, adhering to the eligibility criteria set out on page 8 of the Grant Call Guidelines document. Companies interested to participate may contribute through in-kind contributions.
What funding sources are subject to the 30% overheads requirement?	The 30% overheads apply only to funding from Singapore. New Zealand funding is not subject to this requirement.
Is there any limit to the number of proposals an applicant can submit as PI or co-PI?	There is no restriction on the number of proposals an investigator can participate in. However, we recommend that investigators avoid participating in duplicative projects across different teams, and instead contribute to projects that deliver substantially different outcomes.
Does funding cover researchers outside of Singapore and New Zealand?	Funding is given to the Singapore and New Zealand PIs for the awarded projects. However, research teams may arrange subcontracting to external collaborators where necessary.
What is the number of KPIs required for each project?	KPI targets should be set separately between Singapore and New Zealand teams in the proposal submission, and should reflect the ambition of the project and expected technology development, and be aligned with expected commercialization outcomes of the project.

OTHER QUESTIONS (2 / 6)

Question	Answer
What is the total volume of the Call?	NZ\$ 12 million is available to fund 4 projects at up to NZ\$ 3 million each, with equivalent funding from Singapore to fund the same number of projects at up to S\$ 1.25 million each.
Will proposals that cover both “Health and Nutrition” AND “Smart and Sustainable Processes” research areas be considered?	Yes.
Are project teams that have previously funded collaborative projects between Singapore and New Zealand advantaged in this Call?	No. Proposals are assessed according to their expected impact, scientific excellence and quality of connections established, and project teams that have previously worked together are not expected to have any preferential treatment during the selection process. Projects previously funded in the last A*STAR-MBIE bilateral grant call in 2020 are also not expected to automatically receive follow-up funding for their projects; proposals that build on previously awarded projects will be fairly assessed alongside proposals from other teams.
Please clarify the expectations around TRL 3-5 and need for commercialization outcomes.	Projects should start with technologies at intermediate TRL (3-5) and develop them with research translation in mind. While projects are not expected to deliver commercialization immediately at the end of the project period, proposals are expected to describe the commercialization pathway of its project deliverables and expected time to impact in the future food industry.

OTHER QUESTIONS (3 / 6)

Question	Answer
Is the expected end TRL at 6-7?	No specific end TRL targets are set for projects in this Call.
Would project teams with international collaborators be considered for this Call?	Yes, project teams may include international collaborators, so long as there is at least one New Zealand lead PI and one Singapore lead PI.
Are AI applications in food and ingredient innovation in scope for this Call?	Projects involving AI will be considered if the technology developed addressed a current challenge in the future food industry of Singapore or New Zealand, in the areas of “Health and Nutrition” or “Smart and Sustainable Processes”.
Are New Zealand and Singapore sides of the project team submitting separate applications or a single joint application?	A single joint application from each New Zealand-Singapore project team should be submitted via email to A*STAR (with MBIE in CC). The submission should be done by either the New Zealand or Singapore lead PI, while keeping the lead PI from the other nation in CC.
May I request for additional funding above the stated amount available per project?	No. Projects should be scoped such that they can be reasonably achieved within the amount of project funding available.

OTHER QUESTIONS (4 / 6)

Question	Answer
What does “extended consumption of future foods” mean, and what timeframe would be relevant for this Call?	No set timeframe for the “extended consumption of future foods” expectation. Project teams may define the time frame according to what’s realistic to achieve in this study and whether the results lead to significant impact in the future food industry.
Does the definition of future foods also include convention food products that utilize novel or advanced production systems to achieve greater productivity or sustainability?	Please refer to the definition of future foods on page 4 of the Grant Call Guidelines document, which by extension outlines the types of companies that fall within the scope of future food innovation. Projects that develop technologies that overcome challenges faced by such companies will be considered in this Call.
Are the nutritional benefits of future foods expected to be demonstrated in human studies?	No explicit requirements, though human studies are desirable if they can be done in the project duration. Projects may propose how to demonstrate nutritional benefits through animal, <i>in vitro</i> or <i>in silico</i> models as an alternative to human studies.
Is there a weighting on how New Zealand or Singapore should benefit from the project, based on the difference in funding?	The dollar amounts funded by New Zealand and Singapore are equivalent in value and is expected to provide similar value in benefits to both sides.
Please clarify the ownership of the generated IP in this joint project	The general principle for IP ownership is that IP jointly developed should be jointly owned, and IP solely developed should be solely owned. Ownership of foreground IP should be agreed on through the RCA.

OTHER QUESTIONS (5 / 6)

Question	Answer
What is the minimum and maximum FTE for New Zealand PIs and Co-PIs?	At least 0.15 FTE for PIs and Co-PIs. No maximum.
Will the New Zealand PI be required to hold a long employment contract that covers the duration of the project if awarded?	The New Zealand PI is expected to be employed for the duration of the project.
How important will applied consumer insights be for the proposal?	Applied consumer insights should be discussed or actively researched in the proposed project insofar as to demonstrate the applicability of project deliverables to the future foods industry and whether the target consumer market(s) would accept the product / technology developed.
Any objection to the use of animal models in proposed projects in this Call?	No. Please obtain the necessary ethics approvals before proceeding with animal work.
Does a project need to fulfill all five desired outcomes as stated in the Programme Objectives?	The ideal project should meet all five desired outcomes, but there is no hard requirement for proposals to achieve all desired outcomes.

OTHER QUESTIONS (6 / 6)

Question	Answer
Does the future food application areas cover human and non-human (e.g. animal) uses?	The “Health and Nutrition” research area is focused on human populations. Proposed projects should address challenges in the future food industry centered on human applications under both research focus areas.
Is GMO allowed to be used for precision fermentation or cellular agriculture?	New Zealand is currently undergoing genetechnology regulatory reform, though no decision has been made as of 9 December 2024, and proposed reforms may not happen in time for the start of the project in July 2025.
How should consumer insights be integrated in proposed projects?	Applied consumer insights should be incorporated within the design of the proposed research; project teams that successfully incorporate existing or new research would have a better chance at research translation and delivering health and economic impact.
Would novel methods for selective breeding / genetic modification of plants and animals to produce future foods be considered?	This is dependent on the specific needs of future food companies in New Zealand and Singapore; proposals may be considered if the genetic engineering of plants and animals have a tangible translation to an industry application for future foods.
Is industry co-funding an advantage?	Proposals that show industry involvement and support are highly desirable, especially if the company involved has expressed significant interest to commercialize / translate the research outcomes.

ANY OTHER QUESTIONS?

Looking for collaborators to submit a proposal with? Leave your contact info here:



CLOSING KARAKIA

In Te Reo Māori (Māori language)

Ka hiki te tapu
Kia wātea ai te ara
Kia turuki ai te ao mārama
Hui ē, Tāiki ē
Tēnā tātou

English translation

Restrictions are moved aside
So the pathway is clear
To return to everyday duties
Enriched and unified
Greetings to all

THANK YOU