







## Use of biotechnologies



This section asks about the use of biotechnologies by this organisation. Please refer to question 5 for the definitions of the development stages.

### DNA - The Coding

7 Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
genomics, pharmaco-genetics	<input type="radio"/> 0711	<input type="radio"/> 0712	<input type="radio"/> 0713	<input type="radio"/> 0714
gene probes	<input type="radio"/> 0721	<input type="radio"/> 0722	<input type="radio"/> 0723	<input type="radio"/> 0724
DNA sequencing / synthesis / amplification	<input type="radio"/> 0731	<input type="radio"/> 0732	<input type="radio"/> 0733	<input type="radio"/> 0734
genetic modification	<input type="radio"/> 0741	<input type="radio"/> 0742	<input type="radio"/> 0743	<input type="radio"/> 0744

### Proteins and molecules - The functional blocks

8 Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
protein / peptide sequencing / synthesis	<input type="radio"/> 0811	<input type="radio"/> 0812	<input type="radio"/> 0813	<input type="radio"/> 0814
lipid / protein glycoengineering	<input type="radio"/> 0821	<input type="radio"/> 0822	<input type="radio"/> 0823	<input type="radio"/> 0824
proteomics	<input type="radio"/> 0831	<input type="radio"/> 0832	<input type="radio"/> 0833	<input type="radio"/> 0834
hormones and growth factors	<input type="radio"/> 0841	<input type="radio"/> 0842	<input type="radio"/> 0843	<input type="radio"/> 0844
cell receptors / signalling / pheromones	<input type="radio"/> 0851	<input type="radio"/> 0852	<input type="radio"/> 0853	<input type="radio"/> 0854

### Cell and tissue culture, and engineering

9 Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
cell / tissue culture, tissue engineering	<input type="radio"/> 0911	<input type="radio"/> 0912	<input type="radio"/> 0913	<input type="radio"/> 0914
embryo manipulation	<input type="radio"/> 0921	<input type="radio"/> 0922	<input type="radio"/> 0923	<input type="radio"/> 0924
hybridisation	<input type="radio"/> 0931	<input type="radio"/> 0932	<input type="radio"/> 0933	<input type="radio"/> 0934
cellular fusion	<input type="radio"/> 0941	<input type="radio"/> 0942	<input type="radio"/> 0943	<input type="radio"/> 0944
vaccine / immune stimulants	<input type="radio"/> 0951	<input type="radio"/> 0952	<input type="radio"/> 0953	<input type="radio"/> 0954

53 In the last 2 years, how many biotechnology partnerships / alliances did this organisation have with other organisations based in the following countries?

	businesses	universities	other organisations
Australia	<input type="text"/> <input type="text"/> 5311	<input type="text"/> <input type="text"/> 5321	<input type="text"/> <input type="text"/> 5331
USA	<input type="text"/> <input type="text"/> 5312	<input type="text"/> <input type="text"/> 5322	<input type="text"/> <input type="text"/> 5332
Europe	<input type="text"/> <input type="text"/> 5313	<input type="text"/> <input type="text"/> 5323	<input type="text"/> <input type="text"/> 5333
Asia	<input type="text"/> <input type="text"/> 5314	<input type="text"/> <input type="text"/> 5324	<input type="text"/> <input type="text"/> 5334
other	<input type="text"/> <input type="text"/> 5315	<input type="text"/> <input type="text"/> 5325	<input type="text"/> <input type="text"/> 5335
TOTAL	<input type="text"/> <input type="text"/> 5319	<input type="text"/> <input type="text"/> 5329	<input type="text"/> <input type="text"/> 5339

54 In the last 2 years, how many overseas partnerships / alliances worth the following dollar values did this organisation have?

**Note** the total number of partnerships should be the same as that of question 53.

	businesses	universities	other organisations
No monetary value	<input type="text"/> <input type="text"/> 5411	<input type="text"/> <input type="text"/> 5421	<input type="text"/> <input type="text"/> 5431
\$1 - \$500,000	<input type="text"/> <input type="text"/> 5412	<input type="text"/> <input type="text"/> 5422	<input type="text"/> <input type="text"/> 5432
\$500,001 - \$5 million	<input type="text"/> <input type="text"/> 5413	<input type="text"/> <input type="text"/> 5423	<input type="text"/> <input type="text"/> 5433
over \$5 million	<input type="text"/> <input type="text"/> 5414	<input type="text"/> <input type="text"/> 5424	<input type="text"/> <input type="text"/> 5434
TOTAL	<input type="text"/> <input type="text"/> 5419	<input type="text"/> <input type="text"/> 5429	<input type="text"/> <input type="text"/> 5439



## Biotechnology partnerships and alliances

**50** In the last 2 years, did this organisation have any partnerships / alliances for undertaking biotechnology activity (research and / or production)?

**Note** partnership / alliance is defined as an agreement with another business to undertake business activities (without merging).

- 1 yes → go to **51** 5000
- 2 no → go to **55**

**51** In the last 2 years, how many **New Zealand** biotechnology partnerships / alliances worth the following dollar values did this organisation have?

	No monetary value	\$1 - \$500,000	\$500,001 - \$5 million	over \$5 million
businesses	<input type="text"/> <input type="text"/> 5111	<input type="text"/> <input type="text"/> 5121	<input type="text"/> <input type="text"/> 5131	<input type="text"/> <input type="text"/> 5141
universities	<input type="text"/> <input type="text"/> 5112	<input type="text"/> <input type="text"/> 5122	<input type="text"/> <input type="text"/> 5132	<input type="text"/> <input type="text"/> 5142
Crown Research Institutes	<input type="text"/> <input type="text"/> 5113	<input type="text"/> <input type="text"/> 5123	<input type="text"/> <input type="text"/> 5133	<input type="text"/> <input type="text"/> 5143
other organisations	<input type="text"/> <input type="text"/> 5114	<input type="text"/> <input type="text"/> 5124	<input type="text"/> <input type="text"/> 5134	<input type="text"/> <input type="text"/> 5144
<b>TOTAL</b>	<input type="text"/> <input type="text"/> 5119	<input type="text"/> <input type="text"/> 5129	<input type="text"/> <input type="text"/> 5139	<input type="text"/> <input type="text"/> 5149

**52** For the partnerships / alliances in question **51**, how many had the following as their primary purpose?

**Note** the total number of partnerships should be the same as that of question **51**.

product / process development	<input type="text"/> <input type="text"/> 5201
research	<input type="text"/> <input type="text"/> 5202
clinical / field trial	<input type="text"/> <input type="text"/> 5203
manufacturing	<input type="text"/> <input type="text"/> 5204
marketing / distribution	<input type="text"/> <input type="text"/> 5205
regulatory affairs	<input type="text"/> <input type="text"/> 5206
finance	<input type="text"/> <input type="text"/> 5207
other, please specify:	<input type="text"/> <input type="text"/> 5208
↳ <input type="text"/>	<input type="text"/> <input type="text"/> 5209

## Process biotechnologies

**10** Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
bioreactors	<input type="radio"/> 1011	<input type="radio"/> 1012	<input type="radio"/> 1013	<input type="radio"/> 1014
fermentation, bioprocessing	<input type="radio"/> 1021	<input type="radio"/> 1022	<input type="radio"/> 1023	<input type="radio"/> 1024
bioleaching, biopulping, biobleaching, biodesulphurisation	<input type="radio"/> 1031	<input type="radio"/> 1032	<input type="radio"/> 1033	<input type="radio"/> 1034
bioremediation and biofiltration	<input type="radio"/> 1041	<input type="radio"/> 1042	<input type="radio"/> 1043	<input type="radio"/> 1044

## DNA and RNA vectors

**11** Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
gene therapy	<input type="radio"/> 1111	<input type="radio"/> 1112	<input type="radio"/> 1113	<input type="radio"/> 1114
viral vectors	<input type="radio"/> 1121	<input type="radio"/> 1122	<input type="radio"/> 1123	<input type="radio"/> 1124

## Other biotechnologies

**12** Mark all that apply for each item listed. In the last 2 years, in which development stage(s) has this organisation used the following:

	research & development	part of the production process	part of the product sold	did not use this biotechnology
bioinformatics	<input type="radio"/> 1211	<input type="radio"/> 1212	<input type="radio"/> 1213	<input type="radio"/> 1214
nanobiotechnologies	<input type="radio"/> 1221	<input type="radio"/> 1222	<input type="radio"/> 1223	<input type="radio"/> 1224
other, please specify:	<input type="radio"/> 1231	<input type="radio"/> 1232	<input type="radio"/> 1233	<input type="radio"/> 1234
↳ <input type="text"/>				<input type="radio"/> 1235

**13** In the **next** 2 years, does this organisation intend to use any biotechnologies other than those already marked in questions **7** to **12**?

- 1 yes → please specify the biotechnologies: 1300
- 
- 1301
- 2 no

**14** Does this organisation currently use, or in the next 2 years intend to use, any of the biotechnologies in questions **7** to **12**?

- 1 yes → go to **15** 1400
- 2 no → go to **63**





## Biotechnology commercialisation

**47** In the last 2 years, how many new or significantly improved biotechnology products or services has this organisation introduced to the market?

**Note** biotechnology products are the goods and services produced for research and commercial use through the utilisation of one or more biotechnology processes.

1 zero 4700

2 1 to 2

3 3 to 10

4 more than 10

**48** In the next 2 years, how many new or significantly improved biotechnology products or services is this organisation likely to introduce to the market?

1 zero 4800

2 1 to 2

3 3 to 10

4 more than 10

## Marine biotechnologies

**19** Mark all that apply. What area(s) of application best describe(s) the research, products or services produced / utilised by this organisation?

aquaculture 1901

marine-sourced bioactives 1902

## Environmental technologies

**20** Mark all that apply. What area(s) of application best describe(s) the research, products or services produced / utilised by this organisation?

bioremediation 2001

mitigation technologies 2002

biosecurity / pest control technologies 2003

environmental indicators 2004

biodiversity / ecology / evolution 2005

## Biomedical science and drug discovery

**21** Mark all that apply. What area(s) of application best describe(s) the research, products or services produced / utilised by this organisation?

oncology / cancer 2101

diabetes / CVD 2102

neurological / muscular diseases 2103

immunological diseases / parasitology 2104

infectious diseases 2105

osteoporosis / bone health 2106

medical diagnostics / devices 2107

biomedical imaging / bioengineering 2108

reproduction 2109

brain / neural studies 2110

small organic compounds 2111

## Impacts and integration of emergent technology

**22** Mark all that apply. What area(s) of application best describe(s) the research, products or services produced / utilised by this organisation?

environmental 2201

social 2202

none of the above 2203

**23** Are there any other area(s) of application that best describe(s) the research, products or services produced / utilised by this organisation?

1 yes → please specify the other area(s) of application: 2300

2301

2 no



## Biotechnology by region

**24** Mark all that apply. In the last 2 years, which of the following areas of biotechnology did this organisation undertake in the following regions:

**Include** biotechnology used in research and development, as part of the production process and part of the product sold.

	human health	animal health	other agricultural biotechnology	medical devices	industrial & environmental biotechnology	other biotechnology
Auckland (Auckland, Northland)	<input type="checkbox"/> 2411	<input type="checkbox"/> 2412	<input type="checkbox"/> 2413	<input type="checkbox"/> 2414	<input type="checkbox"/> 2415	<input type="checkbox"/> 2416
Waikato (Waikato, Bay of Plenty)	<input type="checkbox"/> 2421	<input type="checkbox"/> 2422	<input type="checkbox"/> 2423	<input type="checkbox"/> 2424	<input type="checkbox"/> 2425	<input type="checkbox"/> 2426
Central (Gisborne, Hawke's Bay, Taranaki, Manawatu-Wanganui)	<input type="checkbox"/> 2431	<input type="checkbox"/> 2432	<input type="checkbox"/> 2433	<input type="checkbox"/> 2434	<input type="checkbox"/> 2435	<input type="checkbox"/> 2436
Wellington (Wellington)	<input type="checkbox"/> 2441	<input type="checkbox"/> 2442	<input type="checkbox"/> 2443	<input type="checkbox"/> 2444	<input type="checkbox"/> 2445	<input type="checkbox"/> 2446
Upper South Island (Tasman, Nelson, Marlborough, Canterbury, West Coast)	<input type="checkbox"/> 2451	<input type="checkbox"/> 2452	<input type="checkbox"/> 2453	<input type="checkbox"/> 2454	<input type="checkbox"/> 2455	<input type="checkbox"/> 2456
Lower South Island (Otago, Southland)	<input type="checkbox"/> 2461	<input type="checkbox"/> 2462	<input type="checkbox"/> 2463	<input type="checkbox"/> 2464	<input type="checkbox"/> 2465	<input type="checkbox"/> 2466
Overseas	<input type="checkbox"/> 2471	<input type="checkbox"/> 2472	<input type="checkbox"/> 2473	<input type="checkbox"/> 2474	<input type="checkbox"/> 2475	<input type="checkbox"/> 2476

**45** As at 30 June 2007, what is the headcount of employees working on biotechnology with the following highest qualification levels?

Qualification	Headcount as at 30 June 2007
PhD	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4501
Bachelor degree or equivalent and postgraduate qualifications other than PhD <i>For example</i> Masters degrees and postgraduate diplomas.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4502
Technical and trade qualifications <i>For example</i> NZ Certificate of Engineering and NZ Trade Certificate.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4503
other qualifications	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4504

**46** As at 30 June 2007, what percentage of this organisation's biotechnology employees were employed in the following regions?

**Don't include:**

- staff performing indirect support to biotechnology activities
- central finance or personnel services
- centralised support services, eg computer departments, security, cleaning, cafeteria, etc

Auckland (Auckland, Northland)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4601
Waikato (Waikato, Bay of Plenty)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4602
Central (Gisborne, Hawke's Bay, Taranaki, Manawatu-Wanganui)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4603
Wellington (Wellington)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4604
Upper South Island (Tasman, Nelson, Marlborough, Canterbury, West Coast)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4605
Lower South Island (Otago, Southland)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4606
Overseas	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	
	<b>1 0 0 %</b>	





## Source of biotechnology funds

**34** For the last financial year, what were the sources of funds for the biotechnology expenditure of this organisation, as indicated in question 31?

**Note:**

- sources should be the original sources providing funds
- funds received as levies or subscription fees from member associations, or other associated industry organisations should be treated as payments from other organisations, and not included in question 35

**35 Own funds**

**Include:**

- equity, reserves, borrowing and retained earnings
- funds from New Zealand organisations in the same group

% 3501

**36 New Zealand private sector**

**Include:**

- private and publicly listed organisations
- state-owned enterprises
- producer boards
- research associations

% 3601

**37 New Zealand government funding agencies**

**Include:**

- Foundation for Research Science and Technology (FRST)
- New Zealand Trade and Enterprise (NZTE)
- Royal Society of New Zealand (RSNZ)
- Health Research Council

% 3701

**38 Other New Zealand government departments, ministries, crown entities or crown-owned companies.**

**For example:**

- Crown Research Institutes

**Don't include:**

- state-owned enterprises (include in question 36)

% 3801

**39 New Zealand local government sector**

**For example:**

- district councils, city councils and regional councils

% 3901

**40 New Zealand tertiary education sector**

**For example:**

- universities and polytechnics

% 4001

**41 Overseas funds**

**Include:**

- funds from overseas organisations in the same group

% 4101

**42 Other funding sources**

**For example:**

- Lottery Board, Cancer Society and charities

% 4201

Sources of funds should total to 100%     %



## Business activity

**43** In the last financial year what percentage of this organisation's biotechnology expenditure was spent in the following areas, as indicated in question 31?

human health	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4301
animal health	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4302
other agricultural biotechnology (exclude animal and human health)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4303
medical devices	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4304
industrial and environmental biotechnology	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4305
other biotechnology	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	4306
	<hr/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %	

