

Renaissance BioScience

Life sciences

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Price N/A

Market cap N/A

RNAi technology from bioengineered yeast

Renaissance BioScience is a private bioengineering company developing proprietary yeast strains for use in the food and beverage, healthcare and agriculture industries. It has been successful in commercially licensing its 'Generation 1' technology, which comprises yeast strains for use in the food and beverage industry. The primary focus has now shifted to the development of its 'Generation 2' technology – yeast strains capable of producing and delivering RNAi – and aims to address challenges in the agriculture and biopharmaceutical industries. Early results indicate that its RNAi solutions could be low-cost, efficacious and non-toxic. As the company is a private entity, we have limited visibility on its financials. However, in [November 2021](#), it successfully closed the balance of its US\$5m convertible debenture, proceeds from which have been allocated to advance its RNAi platform.

A new generation for new applications

Renaissance's Generation 1 yeast strains were designed to reduce the unpleasant odour from hydrogen sulphide in wine and lower [carcinogenic](#) acrylamide in baked foods. The strains have been patented and commercially licensed to global industry leaders such as Kerry and Lallemand, from which it receives sales royalties. Its Generation 2 yeast strains are being engineered to produce and deliver RNAi molecules, with the initial focus on their use as a biopesticide for crop protection. With an overarching goal of reducing the use of chemical pesticides in agriculture, biopesticides are a growing market currently estimated to be worth [US\\$4.3bn](#). Renaissance believes its RNAi platform could provide an eco-friendly and low-cost solution, and is exploring the potential of its RNAi platform for aquaculture, animal and human health.

RNAi-based technology in brief

Messenger RNA (mRNA) is used to encode and instruct cells to build proteins that drive cellular function. RNA interference (RNAi) molecules are designed to target specific mRNA molecules, reducing protein production and cell function. RNAi can act as a biopesticide by specifically [targeting an essential gene required for life in a target pest, resulting in its death](#). It can also be used broadly in healthcare, for example by reducing the production of proteins required for [virus replication](#), or by reducing [inflammation related to human disease](#).

Yeast that produces and delivers RNAi

Renaissance's proprietary yeast strains are modified to produce specific RNAi molecules and deliver the RNAi to the target cells. The advantage of this approach addresses the common limitations of scaling RNAi production. By using a yeast-based approach there is access to commonly used, large-scale infrastructure which, with a low cost of raw materials, results in a reduction in the cost of production compared to chemical RNAi synthesis. As a delivery method, inactivated yeast offers advantages such as long shelf life, and can withstand high temperatures, high pressures and harsh conditions.

Business description

Renaissance BioScience was founded in 2013, based in Vancouver, Canada, and is a private bioengineering company. It develops proprietary, genetically engineered yeast strains that produce RNAi. It has commercially licensed its product to the food and beverage industry, and plans to launch products in the healthcare, chemicals and agriculture industries.

Bull

- Highly specific molecules with low toxicity.
- Growing global biopesticide market (currently valued at US\$4.3bn).
- Accessible infrastructure and low cost of production.

Bear

- Competition exists in the RNAi market.
- RNAi programmes are at an early stage of development.
- No current partnerships in the healthcare or agriculture industries

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