EDISON

QuickView

Imagion Biosystems

Nanoparticle-based imaging technology

Imagion Biosystems focuses on the development of new medical imaging techniques using magnetic nanoparticles to identify and diagnose cancer. The company aims to disrupt the cancer diagnosis market, which it estimates is worth US$100bn annually, with its non-invasive and non-radioactive MagSense imaging platform. Imagion's technology is in Phase I trials for the detection of HER2 positive metastatic breast cancer. In 2019, the FDA awarded the MagSense platform Breakthrough Device status, offering a potentially faster time to market.

Superparamagnetism and magnetic relaxometry

The MagSense platform uses the phenomenon of nanoparticle superparamagnetism combined with a technique known as magnetic relaxometry to determine whether iron oxide nanoparticles are present in a biological target. Imagion's platform takes PrecisionMRX nanoparticles and coats them with tumour-specific antibodies so that, when injected into a patient, they bind to the tumour. The magnetic field of bound nanoparticles 'relaxes' slower than those not bound, which can be detected by the MagSense equipment to identify the presence of a tumour and pinpoint its location.

A safer alternative

Unlike positron emission tomography (PET), computed tomography (CT), X-ray or magnetic resonance imaging (MRI) contrast agents, PrecisionMRX iron oxide nanoparticles are non-radioactive and non-toxic. The MagSense detector uses no ionising radiation and is non-invasive, offering considerable safety advantages over these commonly used imaging techniques. Imagion has identified an opportunity in the cancer diagnostic market for highly sensitive tumour imaging techniques that avoid the use of ionising radiation or radioactive tracers. In validation of this need, MagSense was awarded FDA Breakthrough Device status in 2019.

Other tumour types key to development

After significant delays, the company's MagSense technology is currently in Phase I trials for the detection of HER2 metastatic breast cancer, using Herceptin as the targeting antibody. The trial aims to enrol 12–15 individuals across four sites in Australia in 2022 to test the clinical safety and tolerability of the process. Given the existing body of evidence for iron oxide as a non-toxic agent and the non-ionising nature of the imaging, we do not expect any issues in Phase I safety studies. Key to Imagion's development plan is approval in other cancer types and demonstrating high sensitivity and specificity. To this end, the company aims to develop targeted imaging techniques for prostate and ovarian cancers and has recently signed a deal with Patrys (ASX:PAB) allowing the use of the latter's deoxymab platform to target and image brain tumours. This deal has the potential to end in an exclusive licence agreement for the deoxymab platform and represents further external validation for Imagion's MagSense technology.

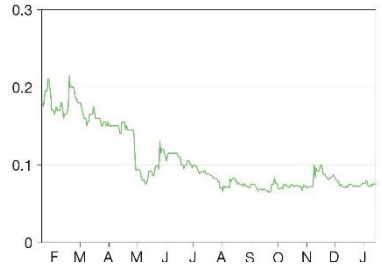
Healthcare

17 January 2022

Price	**A$0.073**
Market cap	**A$82m**

A$/US$0.7159

Share price graph



Share details

Code	IBX
Listing	ASX
Shares in issue	1.12bn

Business description

Imagion Biosystems' platform, MagSense, uses antibody-linked iron oxide nanoparticles to locate and image tumours. The technology is currently in Phase I trials to image HER2 metastatic breast cancer and has been awarded Breakthrough Device status by the FDA. While the platform is only at an early stage, Imagion aims to expand it into prostate and ovarian cancer.

Bull

- Large market (US$100bn) for cancer diagnostics, with potential for use in several indications.
- FDA Breakthrough Device designation is positive validation and could decrease time to market.
- Last reported cash position (Sept 2021) of A$12.0m after successful raises of a combined A$11m in 2020.

Bear

- Early-stage clinical development correlates to higher R&D risks.
- So far trial progress has been very slow, which could continue in future phases.
- A viable commercialisation strategy will rely on approval in multiple indications.

Analysts

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