

Driving intelligent immunotherapy discovery with tailored immunoassay expertise

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Industry

Biologics, Pharmaceuticals

Use case

InterK Therapeutic Peptides uses Malvern Panalytical's immunology assay services to evaluate two novel peptides.

Challenge

Comprehensive exploration of two novel peptides' immunomodulatory effects.

Solution

Malvern Panalytical's immunology assay services.

Results

- Established proof-of-concept for two lead peptides
- A published manuscript in a peer-reviewed journal with more manuscript submissions to high-ranking journals underway
- Increased interest in InterK, leading to partnerships and estimated cost savings of \$1.75 million
- Now more strongly positioned to engage venture capital firms and larger biopharma companies for new opportunities

"The Malvern Panalytical team consistently tailored its services to our goals while delivering quality results. But it's not just about results. Malvern Panalytical's detailed analysis and interpretation helped us confidently choose the most apposite next study to strengthen the case for our candidates."

Michael Agrez, CEO and Chief Scientific Officer,
InterK Peptide Therapeutics
www.interk.com.au

Overcoming the complexity of immunotherapy discovery

InterK Peptide Therapeutics is an Australian early-stage virtual biotechnology company that develops small synthetic anticancer peptides. Through its therapies, InterK aims to address four key challenges in oncology:

- Cancer evasion from the immune system
- Autoimmune reactions to novel immunotherapies
- Increased cancer incidence with age, driven in part by immune system dysfunction
- Growing global skin cancer incidence, despite increased use of UV-blocking sunscreens

InterK's early research suggested that two of its peptide leads could address these challenges. The next goal was to establish that the candidates elicited relevant immunomodulating effects. But investigating a novel compound's immunomodulatory activity is complex work.

www.malvernpanalytical.com



It requires a highly experienced team, the ability to develop and customize appropriate assays, and significant expertise in data analysis and results interpretation. Building these capabilities in-house is often too slow and expensive for small companies.

“Immunology is incredibly complicated,” noted Michael Agrez, CEO and Chief Scientific Officer, InterK Peptide Therapeutics. “You can’t simply explore one question without being forced to explore 10 others. Running a suite of standard, off-the-shelf assays won’t do, either. That’s why you need flexibility and deep area expertise for program success. As a virtual biotech, we needed quick access to this know-how — the best know-how.”

Without the right immunology understanding, companies face slower, more costly asset development — a serious hindrance in a fast-paced, competitive market. In the worst case, companies may not be able to show the value of a promising candidate therapy at all.

In 2016, InterK engaged Malvern Panalytical’s immunology assay services to further investigate the potential of the two peptides. The close collaboration demonstrated proof-of-concept for the candidates, and the study results added significant value to InterK’s intellectual property (IP) portfolio. Moreover, the collaboration strongly positioned InterK for further investment and partnerships.

“Choosing Malvern Panalytical was easy,” noted Agrez. “It was clear from early conversations with their Edinburgh-based team that they had extensive immunological understanding and a deep interest in key parts of our research.”

The solution: Deep, broad, and flexible immunoassay expertise

Over 6 years, Malvern Panalytical’s immunology team conducted more than 70 studies with InterK. The studies explored everything from peptide effects on pro- and anti-inflammatory immune responses, to enzyme activity that helps maintain DNA telomere length. For this, the team used a range of human and murine immune cell and tumor assays. The array of assays meant InterK could comprehensively evaluate their peptides’ activity for stronger evidence and more confident decision-making.

“Beyond having myriad immune cell assays, Malvern Panalytical also created a unique T cell ‘exhaustion’ assay, which gave us rich insight into our peptides’ impact on cancer evasion from the immune system,” added Agrez. Importantly, Malvern Panalytical could pivot

“Their team had ready access to immune cells from healthy human donors of different ages, too, which helped us see if our peptides could prevent age-related immune dysfunction.”

to InterK's needs and draw on rich knowledge to proactively inform further research. "The Malvern Panalytical team consistently tailored its services to our objectives while delivering quality results," Agrez commented. "But it's not just about results. Malvern Panalytical's detailed analysis and interpretation helped us confidently choose the most apposite next study to strengthen the case for our peptides."

When developing immunotherapies, speed is critical. Understanding this, InterK appreciated Malvern Panalytical's timely communications and reporting. "Turnaround times from proposal to results were rapid," added Agrez. "The immunology team has always quickly responded to any scientific queries arising from reports. When time-to-market is critical, no other approach will do."

The results: Compelling data, significant savings, new opportunities

The 6-year partnership benefited InterK in several ways. The studies demonstrated InterK's peptides could potentially overcome some of the most pressing immuno-oncology challenges. A respected scientific journal has published some of the findings, and several more manuscript submissions to high-ranking journals are now underway. Importantly, several academic institutions in Australia became interested in further evaluating InterK's lead peptides.

For example, Agrez notes that InterK received a federal government grant, held jointly with a major university, on the back of the results for one of the peptides. The grant enabled InterK to expand its team for further research, with an estimated cost saving of \$1 million versus

outsourcing the work to a contract research organization (CRO). Similarly, another major Australian university has undertaken research on one of the peptides on InterK's behalf, saving an estimated \$0.75 million.

"The partnership has led to an explosion of interest in InterK, and has added significant value to our IP portfolio," said Agrez.

"We can more strongly engage with venture capital investors and larger biopharmaceutical organizations. Many more exciting opportunities are now on the horizon."

Speaking about the value Malvern Panalytical brings to the immunology space, Agrez concluded, "Many unmet needs remain in oncology. Malvern Panalytical has enormous experience in the field and has developed innovative assays to arm customers for success. But more than that, they go the extra mile. We think of them not as a CRO, but a CCRO — a collaborative contract research organization."

About Malvern Panalytical

We draw on the power of our analytical instruments and services to make the invisible visible and the impossible possible.

Through the chemical, physical and structural analysis of materials, our high precision analytical systems and top-notch services support our customers in creating a better world. We help them improve everything from the energies that power us and the materials we build with, to the medicines that cure us and the foods we enjoy.

We partner with many of the world's biggest companies, universities and research organizations. They value us not only for the power of our solutions, but also for the depth of our expertise, collaboration and integrity.

We are committed to Net Zero in our own operations by 2030 and in our total value chain by 2040. This is woven into the fabric of our business, and we help our employees and customers think about their part in creating a healthier, cleaner, and more productive world.

With over 2300 employees, we serve the world, and we are part of Spectris plc, the world-leading precision measurement group.

Malvern Panalytical. We're BIG on small™

Service & Support

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment with us, and ensure that as your laboratory and analytical needs grow, we are there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

- Local and remote support
- Full and flexible range of support agreements
- Compliance and validation support
- Onsite or classroom-based training courses
- e-Learning training courses and web seminars
- Sample and application consultancy



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