MIP Diagnostics to support the development of challenging affinity reagents with Molecular Imprinting Epitope Discovery

MIP Diagnostics, has today launched its new Molecular Imprinting Epitope Discovery Service for the identification of previously unknow protein surface epitopes.

MIP Diagnostics logo

BEDFORD, BEDFORDSHIRE, UNITED KINGDOM, October 26, 2021 /EINPresswire.com/ -- MIP Diagnostics, a leader in the field of Molecularly Imprinted Polymers (MIPs), has today announced the launch of its novel Molecular Imprinting Epitope Discovery Service for the identification of previously unknow protein surface epitopes.

MIP Diagnostics has developed, in conjunction with the group of founding inventor Sergey Piletsky at the University of Leicester, a novel method of utilising its technology for the discovery of previously unknown epitopes on the surface of a protein, prior to initiating an affinity reagent development rather than at the end.

This new technique will provide valuable insights on surface epitopes with potential antigenic properties prior to the development of new affinity reagents, increasing the chances of success. Delivering results in as little as two weeks, the process is significantly faster than traditional epitope mapping techniques, and allows affinity reagent manufacturers to avoid the 'antibody lottery' when tackling some of the most challenging diagnostic markers.
During the process, a target protein is exposed to a solution of pre-selected monomers which form polymer complexes around exposed surface epitopes, 'trapping' them in the polymer. The remaining protein is digested, and the 'trapped' epitopes are isolated for mass spectrometry analysis. The results can be used to develop new binders such as anti-peptide antibodies and nanoMIPs, enabling new devices that have proven challenging in the past due to lack of quality affinity reagents.

Speaking about the technology, Alan Thomson, Chief Scientific Officer at MIP Diagnostics said, 'We have run several diagnostically relevant proteins through the process, and have successfully identified multiple surface epitopes that do not feature in the literature, and have not previously

had antibodies raised against them. This insight can drive the development of new affinity reagents for challenging applications such as differentiating between structurally similar molecules, or eliminating steric hinderance problems by creating a spatially optimised binding pair.'

Stephane Argivier, Chief Executive Office at MIP Diagnostics added, 'With this novel technique, the industry can avoid the 'antibody lottery' by starting with the end in mind when developing their affinity reagents for their next assay. By testing the process on a number of notoriously challenging biomarkers, we are confident that this novel approach will have a tremendous impact within the IVD and pharma industries.'

MIP Diagnostics is now offering the service to the In-vitro diagnostics market, and is further optimising the methodology for applications in cell and gene therapy.

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