



PEPperPRINT characterizes multiple LRRK2 antibodies for Parkinson's disease research

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PEPperPRINT is pleased to announce the successful completion of a research project funded by The Michael J. Fox Foundation for Parkinson's Research (MJFF) to characterize multiple monoclonal antibodies against LRRK2.

The target protein LRRK2 (Leucine-Rich Repeat Kinase 2) is likely involved in the regulation of signaling pathways in cells. Mutations in the gene for LRRK2 are associated with some familial forms of Parkinson's disease (PD), which makes it a promising drug target. A major hurdle in LRRK2 research has been the lack of appropriate tools and reagents, including high quality antibodies. Specific and sensitive LRRK2 antibodies could be applied for western blot analysis, immunohistochemistry, immunocytochemistry and immunoprecipitation.

To characterize promising antibody candidates, PEPperPRINT was contracted by MJFF to map the epitopes of various anti-LRRK2 antibodies with its high-density PEPperCHIP[®] Peptide Microarray platform. The detailed knowledge of the epitope of a monoclonal antibody helps to understand its interaction with a given target protein and to classify its specificity and sensitivity. PEPperPRINT translated the sequence of LRRK2 into 15mer peptides with a maximum peptide-peptide overlap of 14 amino acids. The corresponding LRRK2 peptide microarrays were assayed with 11 rabbit and mouse monoclonal antibodies to investigate their binding to LRRK2. Based on the resulting interaction patterns, PEPperPRINT successfully determined the epitopes of all monoclonal LRRK2 antibodies with high resolution, and hence enabled the evaluation of their suitability as research agents for Parkinson's disease.

"We were pleased to successfully complete the high resolution epitope mappings of the LRRK2 antibodies, and to support MJFF efforts to understand and cure Parkinson's disease," said Dr. Volker Stadler, CEO of PEPperPRINT. "Our data clearly underlined the need for detailed epitope knowledge to classify research antibodies, and to avoid cross-reactive antibodies leading to false results in research projects."

"LRRK2 is one of our most promising targets for a drug that may slow or stop the progression of Parkinson's disease," said Terina Martinez, PhD, MJFF associate director of research programs. "We're grateful to PEPperPRINT for their important work in developing the tools that will assist us in the discovery and testing of new compounds against LRRK2."

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