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Inventors

Joshua LaBaer

Contact

Jovan Heusser
jovan.heusser@skysonginnovations.com

Assays for High Throughput Targeted Protein Quantification

With the continued advancement of new methods to stratify samples and diseases, there is an increased demand for high throughput (HTP) tools to detect and quantify multiple variables simultaneously. There are numerous tools that enable HPT analyses of the genome, however similar methods and tools for proteomic analyses are not available. While the genome is a great blue print, it does not always reflect the actual state of biology at any time. Thus, HTP tools that more closely reflect the current state of biology, such as proteomic analyses, are needed.

Prof. Joshua LaBaer, Director of the Biodesign Institute of Arizona State University, has developed novel assays, using multiple affinity reagents in a multiplexed set, to measure many different specific protein targets quantitatively and simultaneously. Several different approaches have been developed to measure the target proteins, thereby increasing the versatility of these assays. The affinity reagents can be chosen by the user, thus enhancing the flexibility and tailorability of the assay, so long as they are highly specific, with tight binding and slow off rates. These assays can measure thousands of proteins or other antigens simultaneously with an extraordinary dynamic range.

The quantitative measurement of thousands of proteins, or any detectable antigens, simultaneously, in a very high throughput manner, saves time, reduces associated costs and is a game changer for proteomic analyses.

Potential Applications

- High throughput measurement of the proteome
 - o Can measure thousands of proteins or antigens simultaneously

Benefits and Advantages

- Can be multiplexed in the thousands – saves time and reduces costs
- Uses standard or tailored affinity reagents for increased flexibility
 - o Affinity reagents that detect proteins in a certain conformation

o Affinity reagents that detect proteins with a specific modification

- Does not require the user to remain within a closed system, such as a proprietary set of affinity reagents
- Has a wide dynamic range
- Multiple ways to measure the abundance of the target for increased versatility

For more information about the inventor(s) and their research, please see [Dr. LaBaer's Biodesign webpage](#)