

# Large Scale Detection and Quantification of **Post Translational Protein Modifications**



## The Problem

The amount of biological material and reagents available for PTM analysis is usually very limited. This is even more pronounced for membrane proteins. In contrast, the amount required for analysis PTM is significant. This discrepancy makes PTM analysis very difficult.



## The Solution

The minute amounts of biological material and reagents required for analysis using IMPA override the inherent limitation of PTM research imposed by MS, enabling application to low-mass tissues with relevance to basic and translational science.



## The Commercial Benefit

Our innovative methods for easy and inexpensive multiple parallel PTM analyses may be implemented advantageously in functional proteomic studies to elucidate molecular mechanisms governing human physiology. Since alterations in PTM are increasingly being implicated in human pathogenesis, including heart disease, cancer, neurodegenerative diseases and diabetes, identification and quantitative monitoring of disease-associated changes in PTM have broad biomedical applications for development of both diagnostic biomarkers and new therapeutic targets.



## Market Potential

PTM analysis can provide biomarkers for many diseases including heart disease, cancer, neurodegenerative diseases and diabetes.



## Target Markets/Industries

- Biomedical industry
- Drug screens
- Medical Diagnostics
- Agriculture



## Team: Primary Inventors

### Dr. Doron Gerber

- Dr. Gerber is a faculty member at BIU's Mina and Everard Goodman Faculty of Life Sciences, and the BIU Institute for Nanotechnology and Advanced Materials (BINA) for 5 years now.
- After earning his post-doc at Stanford University, inspired by his mentor, Dr. Gerber established a state-of-the-art research lab for applied microfluidics.



### Dr. Amit Tzur

- Dr. Tzur joined BINA after completing post-doctoral research at Harvard Medical School.
- He has spent many years studying how the cell cycle is affected by gene expression and protein dynamics.
- Dr. Amit Tzur has turned his full attention to PTM – the post-translational modifications through which specific proteins may appear in slightly different forms.



## Future Research

Autophosphorylation of Tyrosine Kinase receptors



## The Opportunity

We offer services for PTM analysis.



## Keywords

- Protein array,
- Protein chip,
- Proteomics,
- Post-translational modification,
- Cell free system,
- Ubiquitin,
- Kifc1