

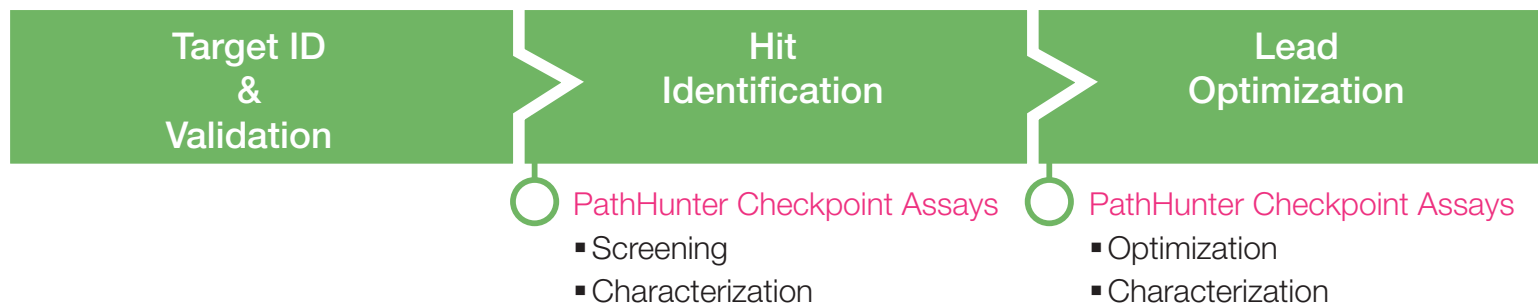
## Enabling Cancer Immunotherapy

From Discovery to Combination Therapies

### What's Inside:

- PathHunter® Checkpoint Signaling Assays
- BioMAP® Oncology Panels
- BioMAP Diversity PLUS™
- BioMAP Combo ELECT

# Immuno-oncology Drug Profiling and Screening Solutions

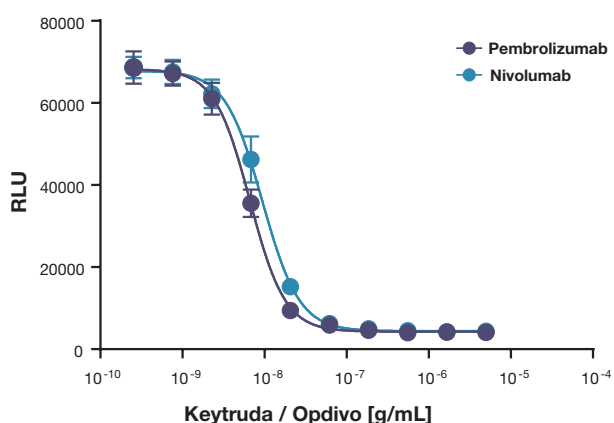


## PathHunter® Checkpoint Signaling Assays

The PathHunter Checkpoint assays are simple, powerful cell-based assays that enable screening, lead optimization & potency assays for immunotherapy drug candidates. These assays offer:

- Fast Results - Simple protocol with results in under 5 hours
- Highly Sensitive Response - Up to 15X more sensitive than other assays
- Biologically Relevant Response – Without complicated T-cell activation or MLR assays

**PathHunter PD-1 Signaling Assay**



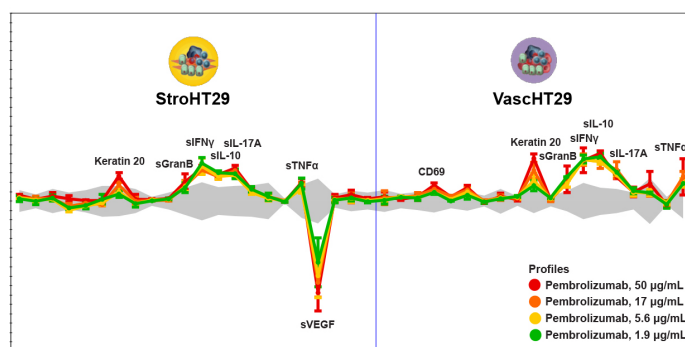
PathHunter Jurkat PD-1 cells were treated with serial dilutions of Pembrolizumab (dark blue) or Nivolumab (teal) for 1hr prior to stimulation with U-2 OS PD-L2 cells for 2hr at RT. The assay faithfully measured the expected potencies of the two therapeutic drugs with low ng/ml sensitivity. These assays can be used to sensitively identify candidate molecules during screening and lead optimization or reproducibly measure drug potency for QC lot release.

## BioMAP® Oncology Panels

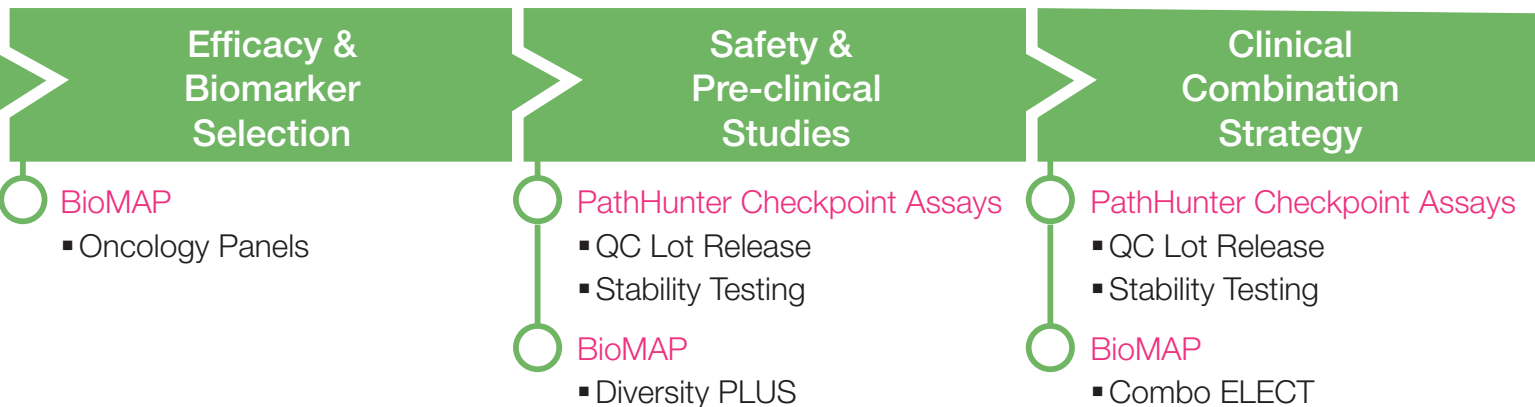
The BioMAP Oncology Panels are complex models of the human tumor microenvironment (TME) that recreate tumor-associated immune suppression, with specific focus on both colorectal and lung cancer. These highly validated systems:

- Identify useful biomarkers with direct translation to *in vivo* experiments
- Mirror published clinical responses to known compounds
- Allow for discrimination and ranking of compounds based on selectivity, efficacy, and safety

**Pembrolizumab releases immune-suppression by tumor cells**



BioMAP profiles for Pembrolizumab at four concentrations are shown for the StroHT29 Oncology System. Pembrolizumab restores immune activity in the Oncology systems, which are excellent models of tumor driven immune-suppression. Protein biomarkers measured listed across the horizontal axis and the change in biomarker expression in response to the drugs shown on the vertical axis. The light gray horizontal band shows the range outside of which a change in expression is statistically significant.



## BioMAP® Diversity PLUS™

Diversity PLUS is a panel of twelve human primary cell systems from multiple tissues designed to represent a broad range of human biology. With the ability to simulate human disease biology and correlate against an expansive historical database, Diversity PLUS is the only phenotypic screening platform that can:

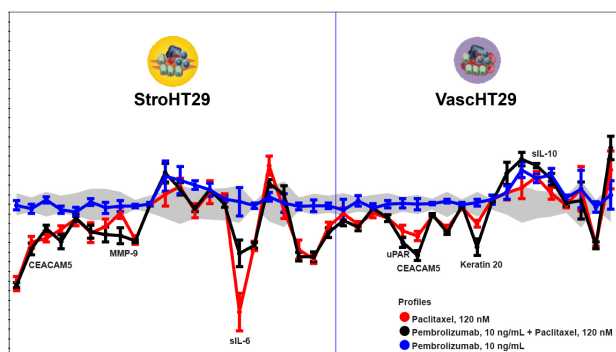
- Identify on- and off-target effects
- Provide insight into mechanism of action
- Predict broad spectrum safety and efficacy prior to lengthy *in vivo* studies

## BioMAP Combo ELECT Services

Leveraging the information gained by the BioMAP phenotypic screening platform, Combo ELECT services enable statistical evaluation of drug combinations to determine whether the combination is active, safe and different. Combo ELECT is used by immuno-oncology groups to:

- Identify drug combinations with improved efficacy or safety profiles
- Distinguish biomarkers of additive or antagonistic responses
- Determine biologically optimal dose range for combination effects

### Combination of Pembrolizumab and Paclitaxel has additive effect on TME



BioMAP profiles for Paclitaxel (red), Pembrolizumab (blue) and in combination (black) are shown for the StroHT29 Oncology System. Protein biomarkers measured listed across the horizontal axis and the change in biomarker expression in response to the drugs shown on the vertical axis. The light gray horizontal band shows the range outside of which a change in expression is statistically significant.

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