

## 19887 pIMAGO®-biotin Phosphoprotein Detection Kit, for Microplate Blot, Fluor 800-based detection (400 wells)

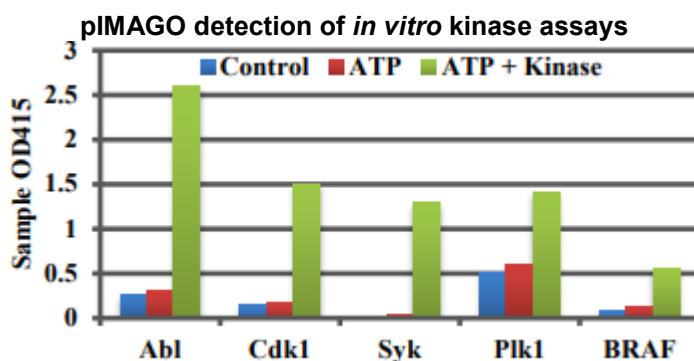
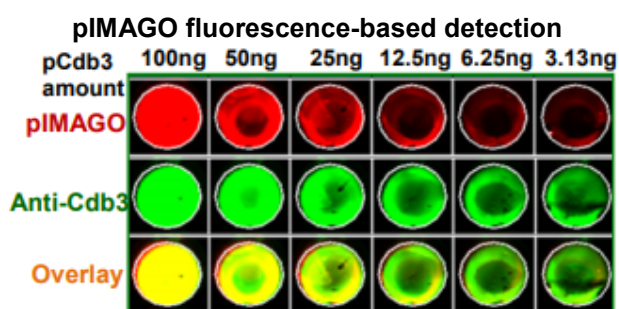
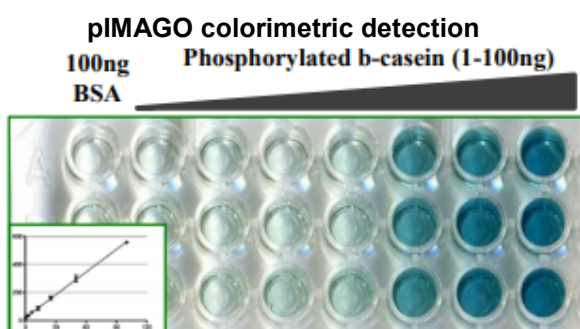
Storage Temperature 2-8°C

### Introduction

pIMAGO is a universal phosphoprotein detection technology that enables sensitive and specific recognition of phosphorylated molecules. Unlike phospho-antibodies, the binding is not biased by amino acid sequence, and therefore can be used for detection of any phosphorylation event on any protein site. pIMAGO detection protocol resembles a simple ELISA procedure and can be easily incorporated by any laboratory. Due to its small size, pIMAGO® can be multiplexed with antibodies for simultaneous detection of phosphorylation and total protein amount.

### Results

pIMAGO-based detection and quantitation of phosphorylated  $\beta$ -casein signal compared to non-phosphoprotein BSA (*left figure*). Multiplexed detection of phospho-Cdb3 using pIMAGO in the 700 channel and anti-Cdb3 antibody in the 800 channel (*right figure*). pIMAGO-based kinase assays of 5 kinases and their substrates, including control, ATP, and ATP + Kinase wells (*bottom figure*).



### Kit components

- 400  $\mu$ L of pIMAGO reagent
- 400  $\mu$ L of avidin-Fluor 800
- 40 ml of Binding buffer
- 240 mL of Blocking buffer
- 240 ml of pIMAGO buffer
- 200  $\mu$ L of control phosphoprotein ( $\beta$ -casein; mix 5  $\mu$ L with 95  $\mu$ L Binding buffer)
- 10 flat-bottom clear 96-well plates

Need to prepare: 1x TBST (Tris-buffered saline with 0.1% Tween 20)

### Protocol



1. **Binding of samples to the 96-well plate**  
Prepare a protein solution of your sample (phosphoprotein or substrate of interest) in **Binding buffer**. A dephosphorylated (e.g. alkaline phosphatase-treated or without ATP) form of the sample should also be prepared as a reference. If protein amount is known, use 10 to 500 ng of the protein or mixture of proteins per 100 µl of **Binding buffer** per well. Add 100 µl of the mix into each well on a 96-well plate. Incubate overnight at 4°C at 400-600 rpm to bind the proteins to the plate. As a positive control, in a separate well mix 5 µL of the provided phosphoprotein with 95 µL of Binding buffer.
2. **Blocking the wells**  
Remove solution from wells, add 150 µl of the **Blocking buffer** into each well and incubate 2-3 minutes. Remove the solution and add 150 µl of the **Blocking buffer** again and incubate for 30 min while shaking at 400-600 rpm at room temperature.  
*\*At this stage, any additional manipulations can be carried out (e.g. kinase/phosphatase assay, inhibitor screening, etc.). Make sure to wash the wells 3x with the 1x TBST after each manipulation.\**
3. **pIMAGO incubation**  
In a clean tube, prepare a 1 to 100 mixture of the **pIMAGO reagent** in the **pIMAGO buffer** (1 µl of the reagent for every 100 µl of buffer). Empty the wells and add 100 µl per well of the prepared pIMAGO mix. Incubate 1 hour at 400-600 rpm at room temperature.
4. **Washing the wells**  
Empty the wells and add 150 µl of the **pIMAGO buffer** into each well; incubate 2-3 minutes at 400-600rpm. Remove the buffer and repeat the washing step two more times with the **pIMAGO buffer** for a total of 3 washes. Remove the solution and incubate the wells with 150 µl of the **Blocking buffer** for 15 min at 400-600 rpm at room temperature.
5. **Incubation with avidin-Fluor**  
In a clean tube, prepare 1 to 100 mixture of **avidin-Fluor** in the **Blocking buffer** (1 µl of **avidin-Fluor** in 100 µl of **Blocking buffer**). Empty the wells and add 100 µl per well of the prepared avidin-HRP in blocking solution. Incubate the plate for 1 hour at 400-600 rpm at room temperature.
6. **Washing the wells**  
Empty the wells and add 150 µl of **1x TBST** into each well; incubate 2-3 minutes at 400-600 rpm and remove the solution. Repeat the washing step with TBST two more times for a total of three washes. Empty the wells.
7. **Signal detection**  
The signal can be detected using any fluorescence imager with an appropriate filter. The number listed with the provided avidin-Fluor reagent represents the absorption maximum (emission wavelength) for that fluorophore.

## References

"Phosphorylation assay based on functionalized soluble nanopolymer". Iliuk, A.; Martinez, J.; Hall, M. C.; Tao, W. A., *Anal. Chem.* **2011**, 83, 2767-2774. PMID: 21395237

## Legal Information

pIMAGO® is a registered trademark of Tymora Analytical Operations, LLC

## Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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