



Application Note: Screening for drugs targeting protein-protein interactions.



Background. Targeting protein interaction with its regulators or substrates represents a current alternative of targeting protein activity. Considering the general side effects associated with targeting the entire activity of important enzyme for normal physiology, this approach is becoming an important facet of drug discovery.

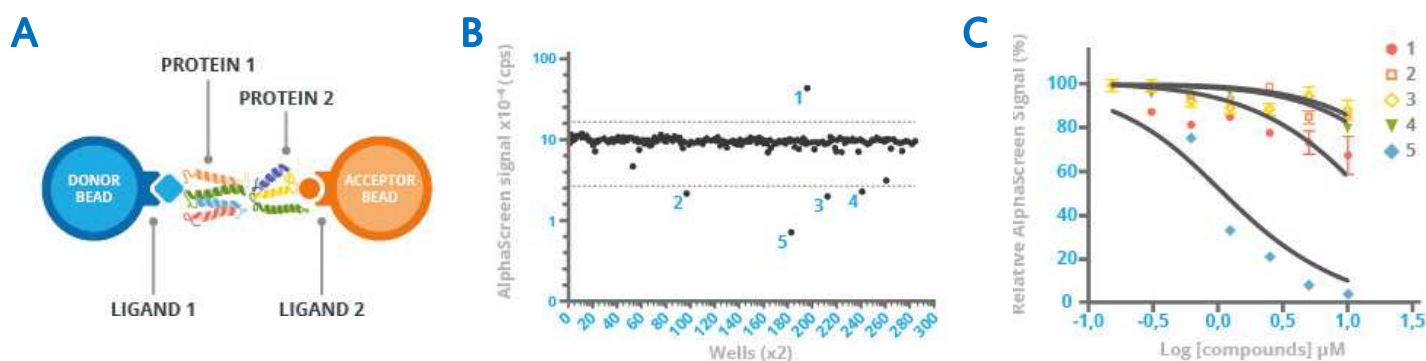


The AlphaScreen® method.

AlphaScreen® (PerkinElmer) is a bead-based assay technology used to study biomolecular interactions in a microplate format. The flexibility and sensitivity of this technology are ideal for the measurement of large protein interactions and complexes up to 200 nm in size.



Procedure. First step regroups the development of the method for assessing the interaction of your two proteins. In this critical step, different approaches (Figure A) could be employed to determine the maximum sensitivity, reproducibility and miniaturization of the method. In the second phase, the screening will be performed on your protein interaction assay, with the chemical library of your choice (Figure B). In the third and last step, the hits will be validated by different assays (Figure C)..



Protein-protein interactions: service pipeline.

A. Principe of the AlphaScreen® method for measuring protein-protein interaction. In an Alpha protein-protein interaction assay, one protein is captured on the Donor beads, and the other protein is captured on the Acceptor beads. When the two proteins interact, the Donor bead is brought into proximity of the Acceptor bead, and excitation of the Donor bead will result in signal generation. B. Example of an AlphaScreen® screening result. 5 drugs (hits) were identified as potential modulators. C. Validation of 5 hits by a competition assay strategy.

Questions? Please contact us: BMYScreen@gmail.com

References. Taouji S et al., 2009 Apr;10(2):93-101 - Bouhcareilh M et al., 2010 Apr;15(4):406-17 - Mazella J et al., PLoS Biol. 2010 Apr 13;8(4):e1000355 - Bouhcareilh M Higa A, Fribourg S, Moenner M, Chevet E. FASEB Journal, 2011 Sep;25(9):3115-29 - Platonova N et al., Blood. 2013 Feb 14;121(7):1229-37 - Bernard SC et al., Nat Med. 2014 Jul;20(7):725-31. <http://www.bmyscreen.com/ourhistory.html>

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Institut Bergonié - 229 cours de l'Argonne - CS 61283 33076 - Bordeaux cedex
Phone : 06 40 05 29 86 - 05 24 07 19 57