

Application Note: How to measure circulating biomarkers in blood?



Background. Quantify biomarkers (phosphoproteins, metabolites, circulating DNA) evolves to use the least of biological samples and yet obtains the most of pertinent informations. New approaches are developed to go further in sensitivity, miniaturization and automatization of biomarkers quantification.

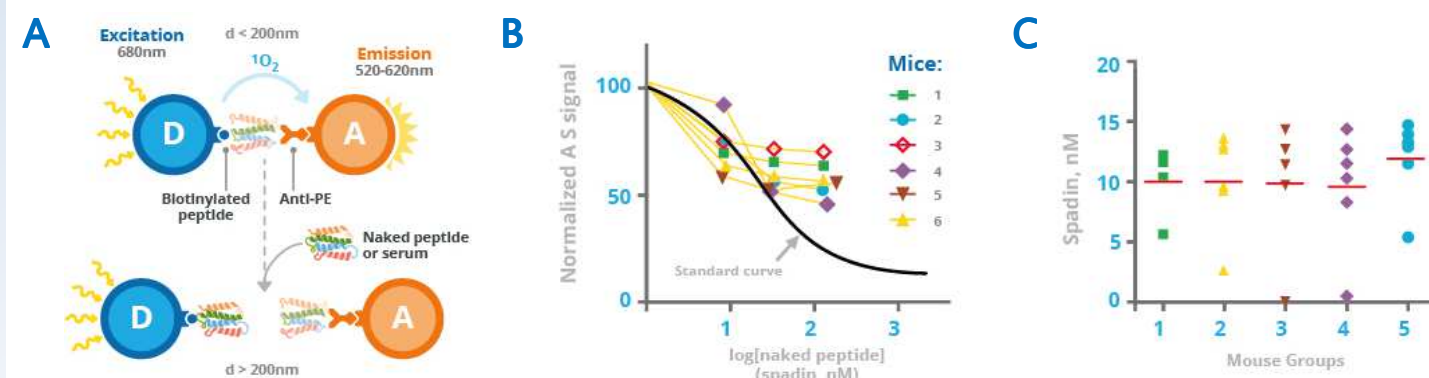


The AlphaScreen® method.

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 to measure rare to abundant biomarkers, using few biological material, and to automate it.



Procedure. First step consists in the development of the method to assess the interaction of the two proteins of reference: the biotinylated peptide and its antibody. This critical step is used to determine the maximum sensitivity, the reproducibility and the miniaturization of the method. In the second phase, the screening will be performed on your samples (lysates, sera, etc.) (Figure B), to lead to peptide dosage in your mice cohort (Figure C).



Peptide dosage (spadin): service pipeline.

A. Principle of the AlphaScreen® method to measure a peptide concentration by a competition test. In this Alpha dosage assay, a biotinylated form of the peptide of interest is captured on the Donor beads, and a specific antibody against the peptide is captured on the Acceptor beads. When we add increasing doses of peptide, the Donor bead loses its proximity to the Acceptor bead, and excitation of the Donor bead decreases, decreasing the signal generation. B. Example of AlphaScreen® signal curves for peptide dosage in 6 mouse sera. C. Calculated concentration of peptide in mouse sera, for 5 mouse groups.

Questions? Please contact us: bmyscreen@gmail.com

References. Mazella J, Pétrault O, Lucas G, Deval E, Béraud-Dufour S, Gandin C, El-Yacoubi M, Widmann C, Guyon A, Chevet E, Taouji S, Conductier G, Corinus A, Coppola T, Gobbi G, Nahon JL, Heurteaux C, Borsotto M. Spadin, a sortilin-derived peptide, targeting rodent TREK-1 channels: a new concept in the antidepressant drug design. *PLoS Biol.* 2010 Apr 13;8(4):e1000355 <http://www.bmyscreen.com/ourhistory.html>