

- (c) detecting a change in binding between said capture proteins and said ligand, said change resulting from interaction with said small molecule.
34. The method of claim 33, wherein step (c) further comprises using mass spectrometry to quantify said change.
35. The method of claim 33, further comprising detecting said binding between said capture protein and said ligand through a fluorescent dye.
36. The method of claim 35, wherein said fluorescent dye comprises a hydrophilic polymer moiety.
37. The method of claim 36, wherein said moiety is a polyethyleneglycol.
38. The method of claim 33, wherein step (c) comprises detecting said binding between said capture protein and said ligand through a labeled phage particle displaying an antibody fragment.
39. The method of claim 33, wherein step (a) comprises attaching said capture proteins on a BSA-NHS slide.
40. The method of claim 34, wherein step (a) comprises attaching said capture protein in a microarray of at least 1,000 spots per cm².
41. A method for labeling an antigen, said method comprising:
- digesting an antigen with a protease thereby to produce multiple peptides such that at least one of said peptides is capable of receiving a label at a region of said peptide that does not interfere with binding between an epitope on said peptide and an antibody or antibody fragment.
42. The method of claim 41, further comprising using a succinimidyl ester dye to label said peptide.
43. The method of claim 42, wherein said succinimidyl ester dye is Cy3, Cy5 or an Alexa dye.
44. The method of claim 41, further comprising labeling only a terminal primary amine of said peptide, wherein said epitope is internal.
45. The method of claim 41, further comprising digesting said antigen with trypsin.
46. A method for detecting a phosphorylated protein, the method comprising the steps of:
- fragmenting a candidate protein into a plurality of peptides comprising a target peptide, the target peptide comprising a phosphorylation site;
 - exposing said plurality of peptides to an antibody or antibody fragment having affinity for an epitope on said target peptide adjacent to said phosphorylation site;
 - selecting said target peptide based on affinity of said target peptide for said antibody or antibody fragment; and
 - conducting mass spectrometry on said target peptide to detect the presence of a subset of said protein that has been phosphorylated.
47. The method of claim 46 wherein step (a) comprises digesting said candidate protein with a protease.
48. The method of claim 47, wherein the protease is trypsin.
49. The method of claim 46 further comprising panning an scFv against said epitope.
50. The method of claim 46 wherein step (c) comprises immobilizing said antibody or antibody fragment to a solid support.
51. The method of claim 46 wherein step (d) comprises detecting a change in the molecular weight of a subset of said target peptide.
52. The method of claim 46 wherein step (d) comprises conducting MALDI mass spectrometry.
53. The method of claim 46, further comprising immunizing a monoclonal antibody against the epitope.
54. The method of claim 46, further comprising immunizing a polyclonal antibody against the epitope.
55. The method of claim 46 wherein the epitope is less than 15 amino acids away from the phosphorylation site.
56. The method of claim 46 wherein the epitope is less than 10 amino acids away from the phosphorylation site.
57. The method of claim 46 wherein the epitope is less than 10 amino acids.
58. The method of claim 46 wherein the epitope is less than 5 amino acids
59. A method of studying a cellular event, the method comprising the steps of:
- attaching a capture molecule on a support surface, said capture molecule having affinity for a ligand;
 - exposing said substrate surface to a solution containing a cellular organelle, said ligand associated with a surface of said organelle; and
 - capturing said organelle through binding between said capture molecule and said ligand.
60. The method of claim 59, wherein said capture molecule comprises a protein.
61. The method of claim 59, wherein said capture molecule comprises an antibody or a fragment thereof.
62. The method of claim 59, further comprising studying a protein associated with said captured organelle.
63. The method of claim 59, wherein said organelle is a mitochondria.
64. The method of claim 63, wherein said ligand is a voltage dependent anion channel receptor that is uniquely associated with the mitochondria membrane.
65. The method of claim 59 wherein said solution is a whole-cell extract.
66. The method of claim 59 wherein said solution is a fraction of a whole-cell extract.
67. The method of claim 59, further comprising detecting said capturing through a fluorescent dye.
68. The method of claim 67, wherein said fluorescent dye comprises a hydrophilic polymer moiety.
69. The method of claim 68, wherein said moiety is a polyethyleneglycol.
70. The method of claim 67 wherein the dye has potentiometric quality for recognizing intact voltage gradient of said organelle.
71. The method of claim 70 wherein said organelle is a mitochondria.
72. The method of claim 59, further comprising detecting said capturing through a labeled phage particle displaying an antibody fragment.