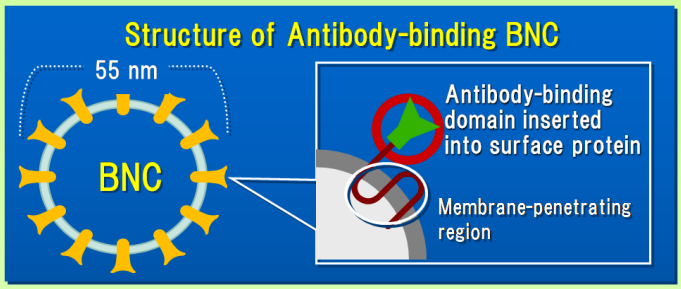
Beacle, Inc.

Antibody Detecting Probe

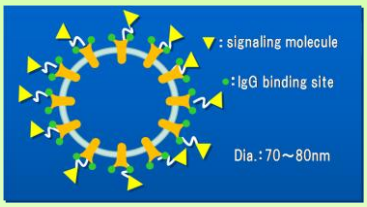
●What is MAD reagent ?

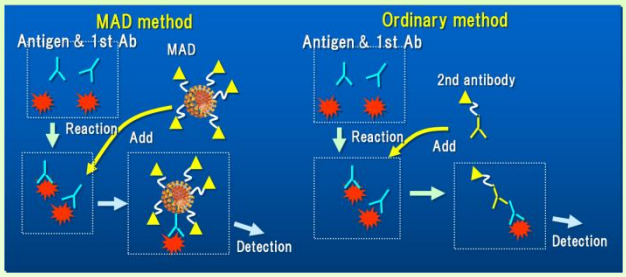
Our antibody binding Bionanocapsule (BNC) is about 55nm nanoparticle consisting of about 100 antibody-binding protein molecules. MAD(Multi Antibody Detection) reagent is the particle labelled with signal generating molecules. And useful for variety of immunoassays.



●How MAD works ?

MAD reagent bind to Fc region of antibodies, and little affect on the antigen-binding ability of antibodies. When mixed with antibodies, MAD reagent forms a complex with antibodies as shown in the right figure which displays Fab region on the particle surface. HRP-MAD reagent is made of BNC having 200 antibody binding sites and labelled with 100 HRP molecules per particle. Thus, MAD reagent has 50 times more labelled HRP and 100 times more antibody-binding sites than HRP-labeled IgGs, and shows much higher sensitivity. MAD can also used for one-step detection using the complex with antibdies.





●Products

Product #	Product name	Product outline	Content
BCL-DC-002	Bionanocapsule-ZZ (BNC-ZZ)	Antibody-binding BNC with protein A originated domain	100μg
BCL-MA-001	HRP-MAD reagent	HRP-labelled BNC-ZZ	100μg
BCL-MP-001	ALP-MAD reagent	ALP-labelled BNC-ZZ	100μg
BCL-MC-001 ～004	Fluorescent-MAD reagent	Cy2-, Cy3-, Cy5-, or Cy7-labelled BNC-ZZ (production by order)	*

Other products are available upon request.
Kit products are available using HRP-labelled MAD reagent; for Western (Easy-WESTERN) and ELISA (Easy ELISA Constructor. Check our website.

See backside for examples

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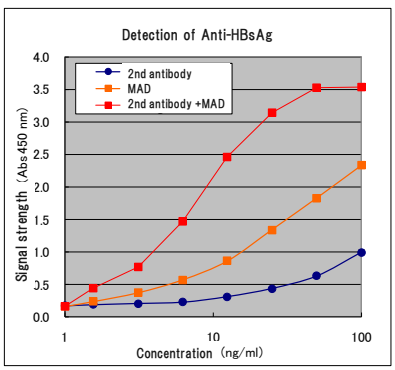
Many ways to use Antibody-binding probes

Antibody-binding BNC		alignment of immobilizing antibodies in ELISA (plate-bound BNC)
		Purification or elimination of IgG(resin-bound BNC)
		Detection of IgGs in immuno-chromatograpy (membrane-bound BNC)
		Highly sensitive IgG detection (using QCM)
HRP-labelled MAD reagent (or ALP-labelled MAD)	Western blot	Sensitivity increase (much increase by simultaneous use with 2nd antibody)
		Simple reprobing
		Simultaneous detection of multi proteins
		Rapid detection using one-step method
	Antibody detecting ELISA	Sensitivity increase (much increase by simultaneous use with 2nd antibody)
		Simultaneous detection of multi antigens
		Rapid detection using one-step method
	Antigen detecting ELISA by direct method	Sensitivity increase (much increase by simultaneous use with 2nd antibody)
Fluorescent MAD reagent	Western blot	Simultaneous detection of several proteins with multicolor
	Flow cytometry	Simultaneous immunolabeling of multiple antigens
	Immunohistochemistry	Simultaneous immunolabeling of multiple antigens

Before you try to one of above applications please consult us. We will provide you advices or protocols. We provide kit products for Western (Easy-WESTERN) and ELISA (Easy ELISA constructor) using HRP-labelled MAD. Using these kits, all applications listed above for HRP-labelled MAD can be done.

Example 1. Highly sensitive detection of anti-HBsAg

Sample: anti-HBsAg Pre-S2 antibody (rabbit)
Method:
Sollid Phase: HBsAg Pre-S2 antigen
Sampe are applied on coated plate
Detection: 2nd antibody (anti-rabbit goat)
HRP-MAD
2nd antibody+HRP-MAD
Result: With 2nd antibody+HRP-MAD, the sensitivity increased about 50-fold as compared with 2nd antibody alone.



Example 2. Simultaneous and multi-color detection of 4 proteins by Western

Sample: Vimentin, GST, Tubulin. Actin
Method:
4 proteins are transferred to PVDF membrane after SDS-PAGE
4 types of fluorescent MAD (Cy2, Cy3, Cy5, Cy7) were conjugated anti-vimentin, anti-GST, anti-tubulin. or anti-actin antibodies, respectively.
Conjugates mixed and applied to the membrane.
After incubation and washing, each fluorescent dye of the membrane was detected by Typhoon(GE).
The detected band was given a pseudo-color, and merged.
Result:
Using fluoresent MAD, simultaneous and multi-color detection of 4 proteins was possible by western.