

## PRODUCT SPECIFICATIONS

Clone	IC2
Isotype	Rat IgM-kappa
Immunocyte	Non-immunized spleen cells from a genuine prediabetic BB-rat
Reactivity:	Multi species pancreatic beta-cell surface specific
Host hybridoma	Rat-rat hybridoma
Fusion partner	Rat myeloma Y3-Ag123
Format	Liquid in PBS, pH 7.4 added 0.1% sodium azide
Quantities	100 µg (purified IgM) 1000 µg (purified IgM) 50 mg (biotinylated format)
Concentration	1.0 mg/ml
Applications	Immunofluorescence Immunocytochemistry Flow cytometry, cell sorting Immunomagnetic separation ELISA, RIA, FIA, BIA Biodistribution <i>in-vivo</i> Noninvasive <i>in-vivo</i> SPECT, PET, BLI and novel photoacoustic imaging (PAT)

## REFERENCES

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beta-cell surface  
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autoantibody

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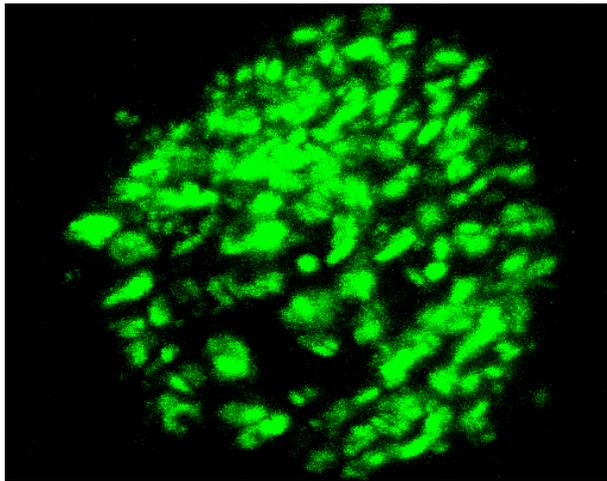
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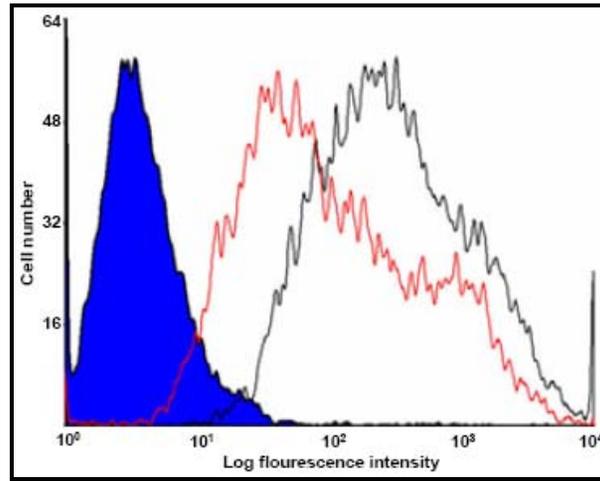


**Fig. 1** Confocal immunofluorescence microscopy of a single RIN-5AH insulinoma cell after indirect IC2-labelling showing the beta-cell surface lipid rafts as the target site for IC2.

The beta-cell biomarker IC2 has multiple *in vitro* applications, like ELISA, RIA, FIA and BIA using insulinoma cell line or native islet cells as target.

The targeted autoantigen of IC2 is located explicit in the plasma membrane, fragile to detergents and denaturants, but also proteolytic sensitive.

The antigen target has to be in its native stage like on intact cell or isolated plasma membrane.

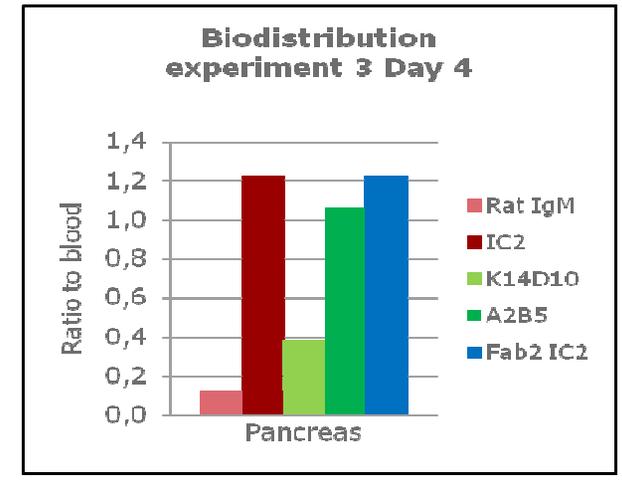


**Fig. 2** Flow cytometric analysis (RIN-5AH) and cell sorting with IC2 in both direct and indirect staining with a factor 100-1000 in specific signal dependent of the functional stage of the beta-cell.

The beta-cell specific labeling with IC2 is dependent of the functional stage of the beta-cell, indicating the targeted autoantigen to be a part of the insulin secreting cascade.

As a functional biomarker IC2 will therefore not label dead or non-insulin-secreting beta-cell.

Preparative cell sorting of beta-cells from islet cell suspensions can be done after IC2-labelling.



**Fig. 3** *In vivo* biodistribution with  $^{125}\text{I}$ -labeled IC2 has clearly confirmed IC2 unique beta-cell specificity *in vivo*. Both the IC2-IgM and its F(ab')<sub>2</sub> fragment bind specifically in the pancreas.

Non-invasive *in vivo* imaging remains still a challenge, not due to missing beta-cell specificity but due to the fact that excess of unbound tracers continue to circulate in the blood for many days.

Optimizing of the tracer dosage and time-course in the *in vivo* labeling call for smaller fragments like F(ab')<sub>2</sub> or recombinant chimeric formats, with a faster blood clearance of unbound excess tracer. Such formats are under development.

