



YASHRAJ
BIOTECHNOLOGY LTD.
a bio-quest for ever



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Dear Valuable Readers,

Welcome to our second newsletter of 2014 ! It's indeed a moment of great pleasure to release the second issue of YBL-Newsletter. An overwhelming response from our first Newsletter demonstrates the success of launching it.

The first quarter of the year 2014 had series of events worth mentioning. We successfully purified various antigens e.g recombinant TNF-alpha, Human Defensin β -2 and FABP3. Our cell culture unit was successful in generating the Monoclonal antibodies against HBA1c, a diagnostically important molecule.

With the remarkable responses received from you, now we feel more encouraged in putting forward the proceedings from YBL.

Let us stay in touch with each other with regular flow of news.

Thank you for the support

(Arvind K. Bhanushali, Bharat T. Dagha, Paresh B. Bhanushali)
Promoter Directors

*****PSA–Glycan*** Potential Prostate cancer Biomarker**

Glycosylation is one of the most common post-translational modifications of proteins. It has been shown to occur in more than half of eukaryotic proteins and is involved in a variety of biological activities. Altered glycosylation patterns have been demonstrated in various clinical studies such as novel biomarker discoveries, new drugs and therapeutic developments (Belanger et al. 1995).

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YBL-Top Renal Markers



| | |
|------------------------|----------------------|
| A1M | Native |
| B2M | Native |
| Cystatin C | Native |
| IL-18 (Inetrleukin 18) | Recombinant |
| NGAL | Native & Recombinant |



Upcoming products from Recombinant Unit

r-TNF- α

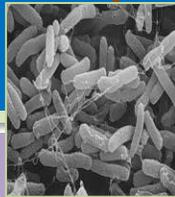
Tumor necrosis factor alpha is a member of the TNF cytokine superfamily. In common with other family members, TNF-alpha is involved in maintenance and homeostasis of the immune system, inflammation and host defense. A significant correlation has been found in the human gastric cancer patients and TNF-alpha. TNF-alpha is considered to be a biomarker for the gastrointestinal cancer.

Expression system: *E. coli*

r-Human beta-defensin-2

Human beta-defensin-2 (HBD-2) is a cysteine-rich low molecular weight and cationic antimicrobial peptide. It is produced by epithelial cells and shows potent antimicrobial activity against *Candida* and Gram-negative bacteria. It plays a crucial role in protecting surfaces epithelia of skin and respiratory tract from infection.

Expression system: *E. coli*



r-FABP3 (Fatty Acid Binding Protein-3)

Heart-type fatty acid binding protein-3 (hFABP-3) is a cytosolic protein of molecular weight 15 KDa. These proteins are believed to participate in the uptake, intracellular metabolism of long-chain fatty acids. h-FABP-3 is a biomarker for myocardial infarction. h-FABP-3 along with cardiac troponin is recommended to be measured for better identification of myocardial infarction patients.

Expression System: *E. coli*

r-ProBNP and r-NT-ProBNP

Brain natriuretic peptide (BNP) is a 32-amino acid vasopeptide secreted by cardiac ventricles. It plays major role in controlling blood pressure by regulating the kidney and systemic vasculature. Proteolytic processing of preproBNP via Pro-BNP intermediate, results into NT-proBNP and BNP. NT-proBNP is 76 amino acid long N terminus cleavage product of prepro-BNP (108 a.a). It is a physiologically inactive part of pro-BNP. NT-proBNP and ProBNP are used for screening and prognosis of heart failure patients.

Expression System: *E. coli*



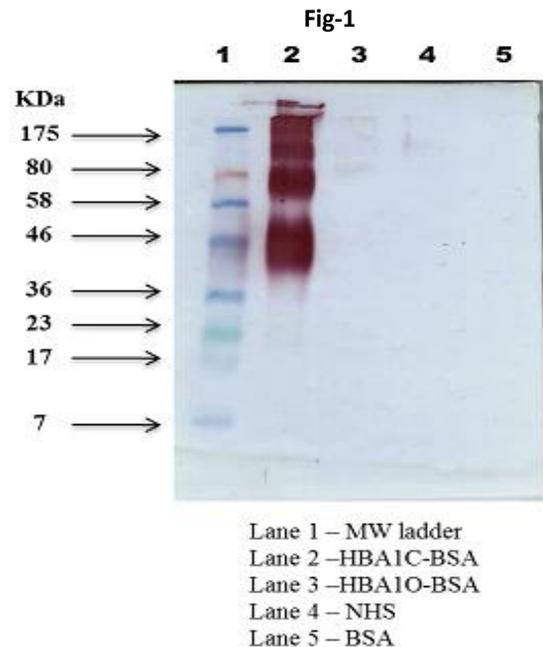
Upcoming products from Cell Culture & Mab Unit

HbA1c Monoclonal antibodies

YBL cell culture unit has successfully generated mouse monoclonal antibodies against the HbA1c. Our antibodies specifically recognize glycated valine in the synthetic peptide comprise of N terminal sequence of hemoglobin β chain. Our data also suggest that our antibodies do not cross react with the non-glycated form (Fig-1). Further, we are in process of studying the binding kinetics of HBA1C Mabs with the antigen by Surface Plasmon Resonance (SPR).

What is HBA1c test?

The popular HbA1c test shows the average level of blood glucose over the previous 3 months. HbA1c is considered to be a prognostic marker for the diabetes mellitus. Higher amounts of glycated hemoglobin in the blood have also been shown to be associated with cardiovascular disease and retinopathy.



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PSA glycans have been defined as sialylated complex with biantennary glycans, fucosylated, with a minor presence of GalNAc (Okada et al. 2001). However, the type and extent of sialylation of these glycans remains to be determined. Yashraj aims to determine the novel glycosylation of the PSA molecule using high throughput analysis for BPH and PCa patient's serum..



What is Third Party Validation (TPV)?

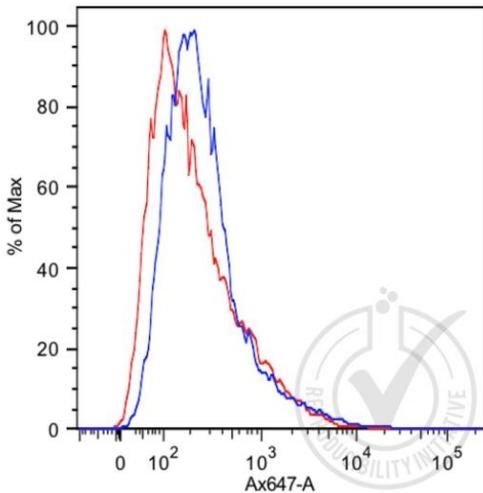


TPV is an independent validation and certification of the products. In continuation efforts to boost the confidence of our customers in our products, we are trying to incorporate the process of Third Party Validation (TPV).

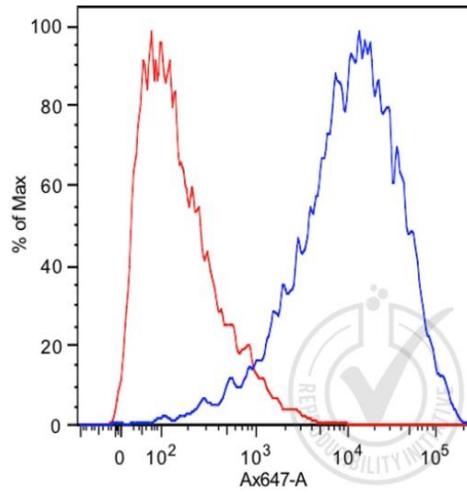
Antibody against CA15-3 like antigen: Third Party Validation (TPV) Reports

Our antibody against CA 15-3 like antigen is the first product which has undergone through the process of TPV. Our antibodies were independently tested and certified for two different assays i.e Flow cytometry and Immunofluorescence (IF). The validation data suggest that our antibody binds specifically to the CA 15-3 expressing Breast cancer cell line, MCF-7 (Fig-2).

antibody validation for Flow Cytometry



Negative Control - C6/36 cells stained with our specific antibody (blue) or isotype (in red)



Positive Control – MCF-7 cells stained with our specific antibody (blue) or isotype (in red)

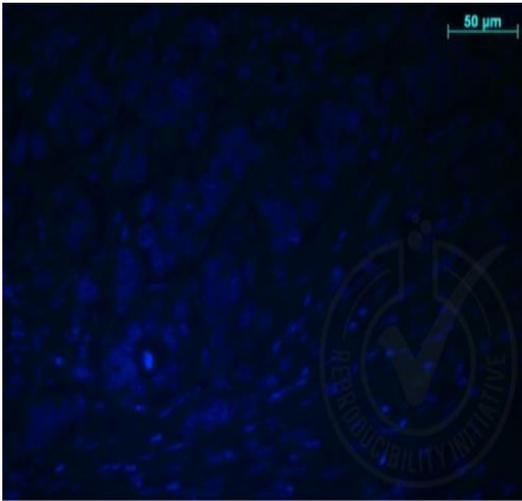
Fig-2

FACS studies performed at Purdue University

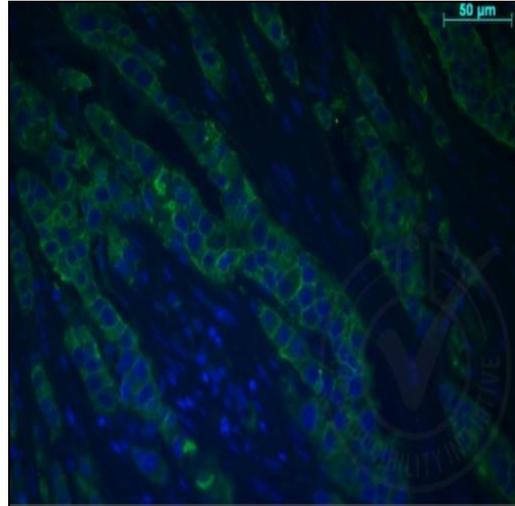


Antibody Validation for IF

In Immunofluorescence (IF) studies strong signal was detected in positive control tissue, while signal was not detected in negative control cells. Presence of specific signals in the positive control suggests specific nature the antibody (Fig-3).



Negative control



Positive control

Fig-3

anti-CA15-3 (green) and DAPI (blue).

IF studies
performed
at
University
of Florida

Bulk Orders & Product Development at YBL

YBL is your trusted partner for supply of high quality Antigens and Antibodies of batch-to-batch consistency with shortest possible lead time, we can also offer the facility of customizing the products as per your specifications, such as buffer, COAs, packaging and logistics.

Besides the products which we regularly make, we can also do R&D and make new products for you with short turn-around time.

Send us an e-mail with an inquiry, comment or suggestions at btdagha@rediffmail.com

For more products information please visit us at <http://www.yashraj.com/>

