



**YASHRAJ**  
**BIOTECHNOLOGY LTD.**  
*a bio-quest for ever*



# The **YBL** Newsletter

Volume 3, Issue 4 - Aug-Oct, 2016



- - - - I N S I D E T H E I S S U E - - - -

**Message from the  
Promoter Directors**

**About Science**

**Our Products**

Dear Readers,

Welcome to this issue of Yashraj Biotechnology's Newsletter. It is indeed a moment of great pleasure to release the fourth issue of our newsletter in 2016. In the previous quarter of the year, we successfully finished the characterization of recombinant Thyroid Peroxidase (TPO). We have also undertaken purification of native retinol binding protein (RBP) as a new project at our R&D lab.

In the second week of November, we will be at the world's biggest expo for In vitro Diagnostics (IVD) and Medical devices at Medica in Dusseldorf, Germany. We cordially invite you to visit our booth # 3G60.

We would also like to take this opportunity to wish you a Merry Christmas and Happy New year. We look forward to consolidating our existing relationships and forging new associations in the future.

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

## ----- $\beta$ 2 MICROGLOBULIN -----

### A biomarker for proximal renal tubule Injury

Beta2 - Microglobulin is a low molecular weight protein present in the most body fluids with increasing concentration in various pathological conditions.

A study by Xu Zeng et al. suggests that in acute kidney injury (AKI) patients with increased serum creatinine, measurement of urinary  $\beta$  2 - microglobulin can be a useful tool to confirm the proximal renal tubule injury. This study also highlights a strong correlation between high urinary  $\beta$  2 -microglobulin and KIM-1 expression in patients with proximal renal tubule injuries. This study was published in the Journal of Biomarkers.

<http://www.hindawi.com/journals/jbm/2014/492838/>

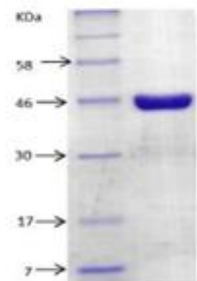
## ----- T R O P O N I N - T -----

### A part of tropomyosin complex

Troponin T is part of the tropomyosin complex and facilitates binding of Troponin C with tropomyosin. Tropomyosin complex slides on the actin filament during the contraction of the muscles. Troponin T is considered to be a gold standard biomarker for the cardiac injuries. It is considered to be more cardiac specific than Creatine Kinase and/or Lactate Dehydrogenase.

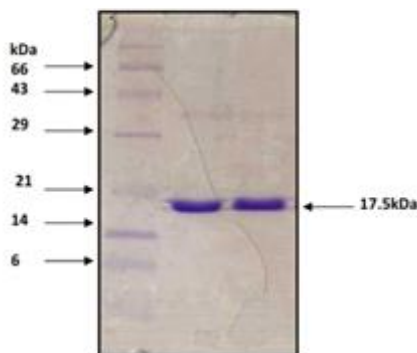
**Route of Production: Recombinant**

Human Troponin T: SDS PAGE



Lane1- Marker  
Lane 2- Troponin T

13% Reduced SDS PAGE: rHu SAA UltraPure



Lane : 1 2 3

Lane1 :MWL  
Lane2: VrSAA0001/14  
Lane3: VrSAA 0002/14

## ----- S A A -----

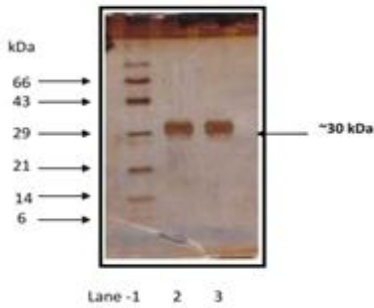
### A family of apolipoproteins

Serum amyloid A (SAA) proteins comprise a family of apolipoproteins that play an important role in HDL metabolism and cholesterol homeostasis. Human SAA1 is a major acute phase protein that is highly expressed in response to inflammation and tissue injury. SAA is considered to be a biomarker for inflammation.

**Route of Production: Recombinant**

## - - - - A1M - - - -

12% Reduced SDS PAGE :A1M HP



Lane -1 2 3

Lane 1- MWL

Lane 2- DA1M 3/11

Lane 3- Internal Control

**A1M** (Alpha-1-microglobulin) belongs to the lipocalin protein superfamily. It is synthesized mainly in the liver cells with major function(s) in the detoxification and clearance of free radicals from the human body. Increased A1M in the urine is believed to be an indicator for proteinuria and other renal disorders.

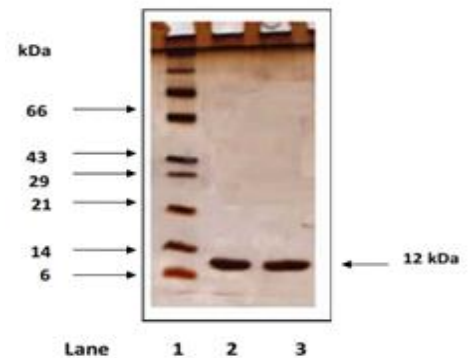
**Route of Production: Native**

## - - - - $\beta$ 2M - - - -

$\beta$ 2M (Beta-2-microglobulin) is a globular protein belonging to MHC class 1 family. It is found on all nucleated cells and shed into the blood stream. Renal failure patients show elevated level of  $\beta$ 2M in the urine, thereby making  $\beta$ 2M an excellent biomarker for monitoring the progression of renal disease to chronic renal failure.

**Route of Production: Native**

15% Reduced SDS-PAGE: B2M



Lane

Lane 1 : MWL

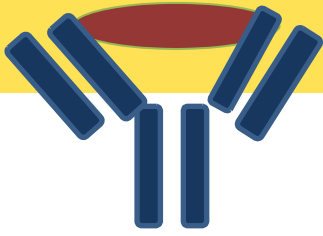
Lane 2: FB2M0032

Lane 3 : B2M Control

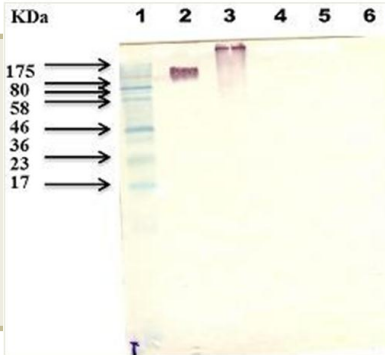
## - - - - HbA1c Monoclonal Antibodies - - - -

Yashraj Biotechnology Ltd. (YBL) cell culture unit has generated a new clone of monoclonal antibodies against the HbA1c. Our antibodies specifically recognize glycated valine in the synthetic peptide comprising of N terminus sequence of hemoglobin  $\beta$  chain. Further, we are in the process of studying the binding kinetics of HbA1C Mabs with the antigen by Surface Plasmon Resonance (SPR).

## - - - - HbA1c Test - - - -



**WB: HbA1c Mab**



- Lane 1 – MW ladder**
- Lane 2 – HBA1c-BSA**
- Lane 3 – HBA1c-KLH**
- Lane 4 – HBA1o-BSA**
- Lane 5 – NHS**
- Lane 6 – BSA**

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

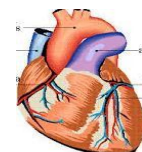
## - - - - YBL-Top Cardiac/CVD Markers - - - -

### **YBL-Cardiac/CVD Markers    Route of Production**

Galectin – 3	Recombinant
Troponin I	Recombinant
NT- Pro BNP	Recombinant
Pro- BNP	Recombinant
FABP-3	Recombinant
Apo-SAA	Recombinant
CRP	Native
Myeloperoxidase (MPO)	Native
D-Dimer	Native

## - - - - Duplex assay: NT-proBNP & CRP - - - -

As per the emerging literature, clinical measurement of plasma levels of NT-proBNP and C-reactive protein (CRP) may enable us in improved prediction of Congestive Heart Failure (CHF) risk and thereby assist earlier implementation of strategies for prevention.

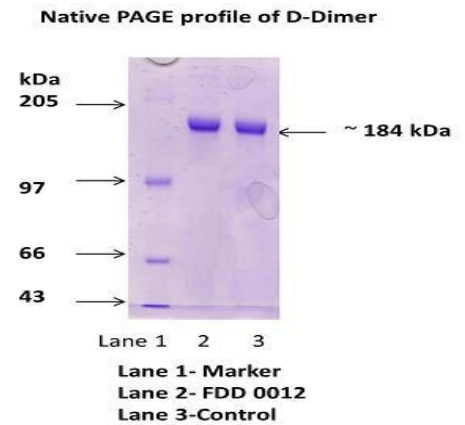


Yashraj Biotechnology Ltd has manufactured and supplies many of the antigens which are being validated by various research labs for the usage in duplex and multiplex assays.

## - - - - D-Dimer - - - -

D-dimer is a degradation product of fibrin. It is considered as a prognostic marker for the thrombotic disorders. D-dimer testing is also used for the evaluation of suspected patients of deep venous thrombosis. On native polyacrylamide gel electrophoresis (PAGE) observed molecular weight of D-dimer is 184 kDa.

**Route of Production: Native**

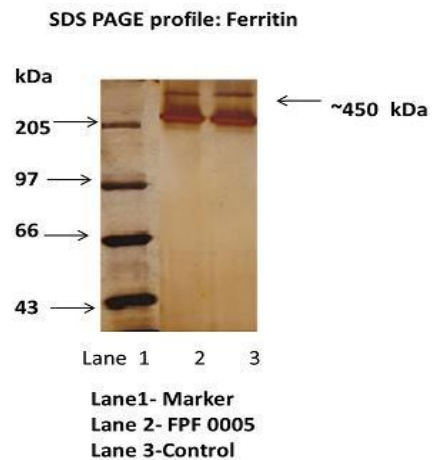


## - - - - Human placental ferritin (PLF) - - - -

Human placental ferritin (PLF) is a heteropolymer comprising of a 43-kDa subunit of ferritin light chain. Placental ferritin acts as a physiological immunoregulator during pregnancy. Elevated level of human PLF is seen in the serum of pregnant women. Molecular weight of native form is observed around 450 kDa.

**Route of Production: Native**

- - - - Meet us @  
MEDICA 2016.  
Düsseldorf  
14<sup>th</sup> to 17<sup>th</sup> Nov. 2016,  
Booth #3G60 - - - -



Send us an e-mail with an inquiry, comment or suggestions at [bharat@yashrajbio.com](mailto:bharat@yashrajbio.com)

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