Newsletter NOVEMBER 2017

PLEASE NOTE CLOSURE FOR THE CHRISTMAS/NEW YEAR BREAK:

CLOSE Dec 22nd – REOPEN Jan 8th 2018

Any urgent business can be emailed to info@biosci.com.au where it will be actioned as time permits.

Orders will continue be sent to suppliers up to Dec 21, however delivery will be pushed back to after January 8th, 2018

If you feel you will need items prior to Christmas, please get your orders in ASAP

RayBiotech
The protein array pioneer

Can't Find The Antibody You Need?

Introduction to Aptamers

Often described as synthetic antibodies, aptamers are single stranded DNA or RNA molecules that fold into defined secondary structures and bind to targets with high affinity and specificity. In 1990, the first aptamer was developed against T4 DNA Polymerase using RNA1. The field of aptamer selection and the use of these aptamers has expanded significantly. Now aptamers are developed using both RNA and DNA, as well as non-natural bases, backbones, and small molecules. Aptamers have been used in a variety of applications; detection molecules in ELISA-like assays, protein-specific tissue staining, targeted drug delivery, and as an FDA-approved treatment for macular degeneration2. Aptamers are developed using a process known as SELEX (Systemic Evolution of Ligands by Exponential Enrichment). During SELEX, trillions of random DNA oligos are mixed with the target molecule; sequences that bind to the target are then collected and amplified. After multiple rounds of selection, the DNA is sequenced and individual sequences are evaluated for binding. Using SELEX aptamers with affinity for a variety of targets can be developed, including proteins, peptides, and small molecules.

The Aptamer Advantage

Due to their robust binding affinities for specific biomolecules, aptamers have been explored as an alternative to antibodies. Aptamers offer the following advantages:

- **Increased thermal stability and shelf life**
- **Aptamers can undergo multiple freeze-thaw cycles and retain activity**
- **Aptamers can be designed to increase enzyme resistance for *in vivo* and *in vitro* use.**
- **Aptamers can be modified with fluorescent dyes or biotin for detection without post synthesis modification**
- **Aptamers can be easily conjugated to proteins, peptides, drugs, and other small molecules using a variety of chemistries**
- **Time to completion of custom aptamers is significantly faster than antibody development, generally 2-3 months**
- **Eliminates need for hybridoma storage and maintenance**
- **Easily scalable; can be generated and replenished without the use of animals**

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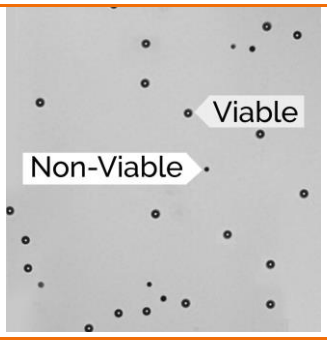
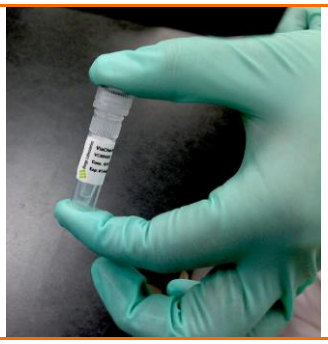
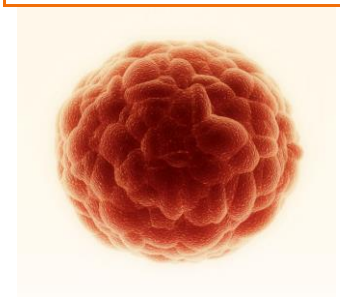
Bangs Laboratories, Inc.

BEADS ABOVE THE REST

VIACHECK CONTROLS ViaCheck SingleShots, minimizing error and maximizing efficiency by circumventing potential human error from repeated bottle resuspension & pipetting steps.







CANCER RESEARCH

Our Quantum MESF & Quantum Simply Cellular kits support quantitative flow cytometry in cancer research & immunotherapy development.

For pricing please contact info@biosci.com.au

Jena Bioscience
Building Blocks of Life

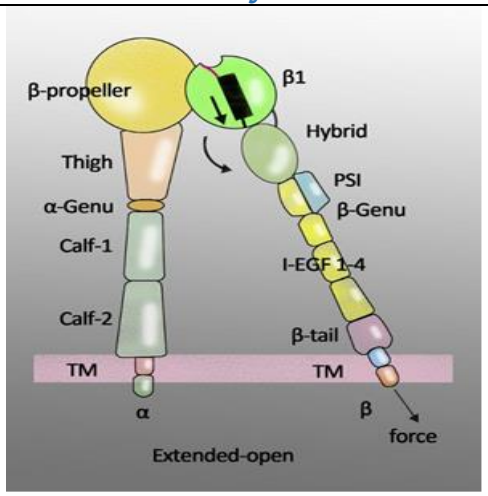
The Frag Xtal Screen - In drug discovery, often small molecules ("fragments") are screened for efficient binding* to a specific protein target. Due to their small size, fragments can be chemically evolved or linked to each other, finally yielding a desired high-affinity lead structure. The new Frag Xtal Screen is based on the approach "Crystallography first": X-ray crystallography shows not only whether a fragment binds to the protein but also where and how the binding occurs. Crystals of the target protein are soaked with distinct fragments and their structural data are directly collected.

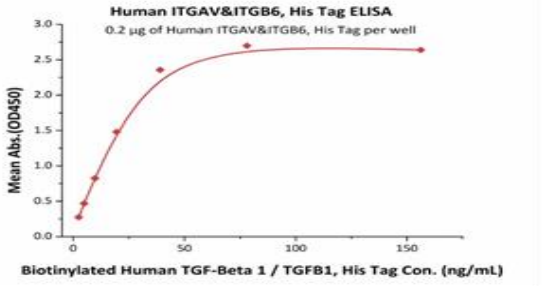
Pricing info@biosci.com.au

A comprehensive panel of integrin proteins from ACROBiosystems

Integrins are transmembrane receptors that facilitate cell-extracellular matrix adhesion. It consists of two subunits: α (alpha) and β (beta). There are 18 α and 8 β subunits in mammals' integrin. Integrin family proteins mediate leukocyte accumulation at inflammation site, and therefore are considered as important therapeutic targets for inflammatory disorders (Park et al., 2015). Fibronectin, vitronectin, laminins, and TGFβ1 are all capable of binding to integrins. It's noteworthy that integrins are also involved in the activation of TGFβ, a key regulator of wound healing, immunity, and carcinogenesis. TGFβ activation by integrin αvβ6 is a key mechanism in the pathogenesis of fibrosis.

ACROBiosystems provides a comprehensive panel of integrin proteins, including Biotinylated Human Integrin alpha V beta 6 (ITGAV&ITGB6) Heterodimer Protein (Coming Soon), Human Integrin alpha V beta 6 (ITGAV&ITGB6) Heterodimer Protein (Cat. No. IT6-H52E1) and Human Integrin alpha V beta 8 (ITGAV&ITGB8) Heterodimer Protein (Cat. No. IT8-H52W4).





Immobilized Human ITGAV&ITGB6, His Tag (Cat. No. IT6-H52E1) at 2 μg/mL (100 μL/well) can bind Biotinylated Human TGF-Beta 1 / TGFB1, His Tag & Avi Tag with a linear range of 2-39 ng/mL (QC tested).

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invitron

DIABETES AND METABOLISM KITS

Introducing a supplier of high quality diagnostic test kits – developing new and innovative products for use in healthcare and toxicology.
Invitron's luminescence assay kits have been designed to be compatible with standard laboratory equipment and can be easily automated using robotic liquid handling systems. Instruments from leading suppliers have been validated for use with these assays.
Invitron's chemiluminescence technology uses an acridinium ester (AE) compound that can be linked directly to binding reagents such as antibodies or oligonucleotide probes. These labelled reagents can be individually designed to target an infinite range of substances of biomedical interest which are then quantified by the intensity of the light generated in the chemiluminescent reaction.

For further information regarding product range, please visit www.invitron.co.uk and pricing info@biosci.com.au

Genlantis

Gentle Cell Lysis with Higher Yield of Native Proteins

The SoluLyse Advantage.

Making proteins is not an easy task, and no one wants to waste proteins by using the wrong method to recover them. Mechanical cell disruption methods such as sonication, if not used carefully, can irreversibly denature the proteins due to the heat and foam generated from the procedure. Many commercial lysis reagents simply fail to efficiently extract soluble proteins by converting originally soluble proteins to insoluble ones. Other reagents require enzyme additives and add extraneous proteins that unnecessarily complicate downstream applications.

SoluLyse™ Bacterial Protein Extraction Reagent provides the most efficient method for bacterial cell lysis and protein extraction under non-denaturing conditions. The advantage of this novel reagent is simple – it offers up to 10 times increase in soluble protein extraction efficiency when compared to other leading commercial lysis reagents. In addition, SoluLyse reagent is more compatible with purification resins, resulting in much higher yield of purified proteins.

- **LS100125 LS100500**

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