



Anteo Diagnostics (ASX:ADO)

Better Binding - Faster
Dr. Geoff Cumming – CEO
September 2011

Lead Product: Mix&Go™

- Mix&Go™ is a molecular glue – diagnostics, drug manufacturing and drug discovery all benefit from “improved” surface properties – **it enables better and earlier disease detection**
- Mix&Go™ is a novel ‘glue’ - **like a two sided velcro**
- Result of screen on 8000 surfaces to find “glue” to bind antibodies to a solid surface
- Successfully trialled by all major bead manufacturers and found to be faster, easier and less variable than current practice to bind proteins to beads
- Successfully trialled by most major IVD suppliers and found to improve sensitivity of tests, where there is a clinical benefit; be easier than current practice and lead to significant reductions in COGS
- IVD suppliers do not change easily – look for points of differentiation, which are often small - Mix&Go™ provides many fold improvements

The Mix&Go™ Principle



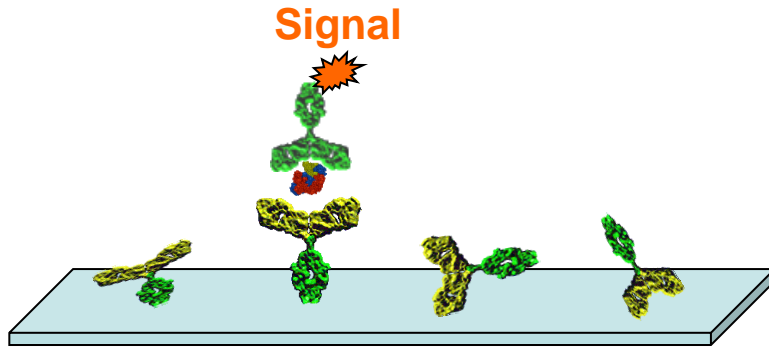
Just Like Mussels Sticking to a Rock

Mussels attach themselves to surfaces with a fibrous appendage called the byssus

- Individual threads are stiff but stretchy, in order to withstand the energy of crashing waves
- These metal-protein complexes have a high breaking force, but unlike covalent bonds they are reversibly breakable
- Pull themselves back together once they have broken*

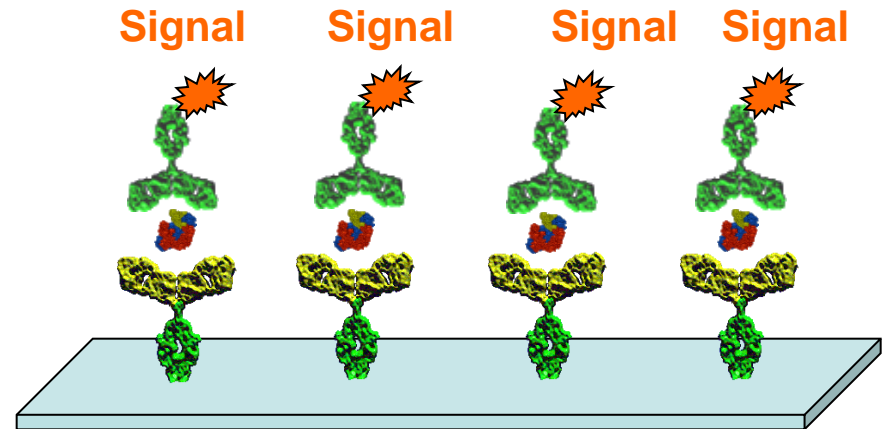
Mix&Go uses the same principle to attach biomolecules to surfaces

Mix&Go™ Overview



Standard attachment chemistries: a significant proportion of the capture antibodies are not functional

With Anteo's **Mix&Go™** technology most antibodies are properly oriented and functional



Mix&Go™ Characteristics

- Metal ion complex
- Avidity binding, “double-sided velcro”
- Mix&Go selected for antibody binding capacity targeting the Fc region
 - Better antibody orientation and performance
 - Faster, more cost-efficient assay development
- Binds a range of other proteins, e.g. streptavidin, proteins A and G, and polypeptides

Mix&Go™ Features

- Easy to use
- Easy to manufacture
- Rapid and stable surface activation
- Gentle – does not harm antibodies
- Requires less antibody
- Improves antibody orientation
- Stable antibody immobilization
- Scalable
- Excellent batch-to-batch reproducibility
- Versatile – broad applications

Mix&Go™ Beads are Easy to Manufacture

Mix&Go™ beads are manufactured simply by treating beads with Mix&Go™ for as little as 15 minutes at room temperature.

No additional reagents are required.



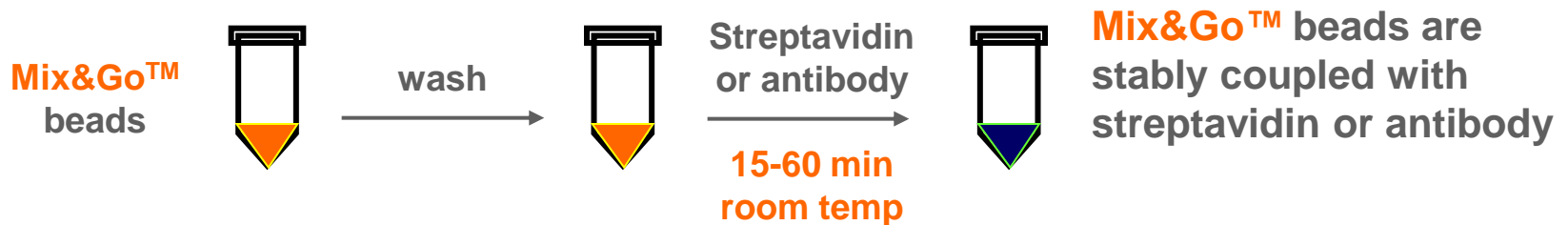
Mix&Go™ beads may be stored for >1 year without loss of protein-binding capacity or immunoassay performance.

Manufacture of Mix&Go™ beads is scalable.

Mix&Go™ Beads are Easy to Use

Mix&Go™ beads are easily coupled with proteins such as streptavidin or antibodies in 60 minutes or less at room temperature.

No additional reagents are required.



Streptavidin-coupled and antibody-coupled Mix&Go™ beads may be used immediately or stored for later use.

Mix&Go™ Comparison Data - Sensitivity

Mix&Go beads offer superior immunoassay **sensitivity** compared to Dynabeads M-280 Tosyl

	Immunoassay Analyte					
Activation technology	IL-6#	HBsAg	TSH	PSA	TNF α	GM-CSF
Mix&Go™	0.2	24	0.0006	3.5	0.5	12
Tosyl	2.4	1040	0.0017	200	0.9	67
Improvement Factor	60	43	2.8	57	1.8	5.6

Limit of detection values in pg/ml, except TSH, μ IU/ml

Protein coupling times:

Mix&Go™

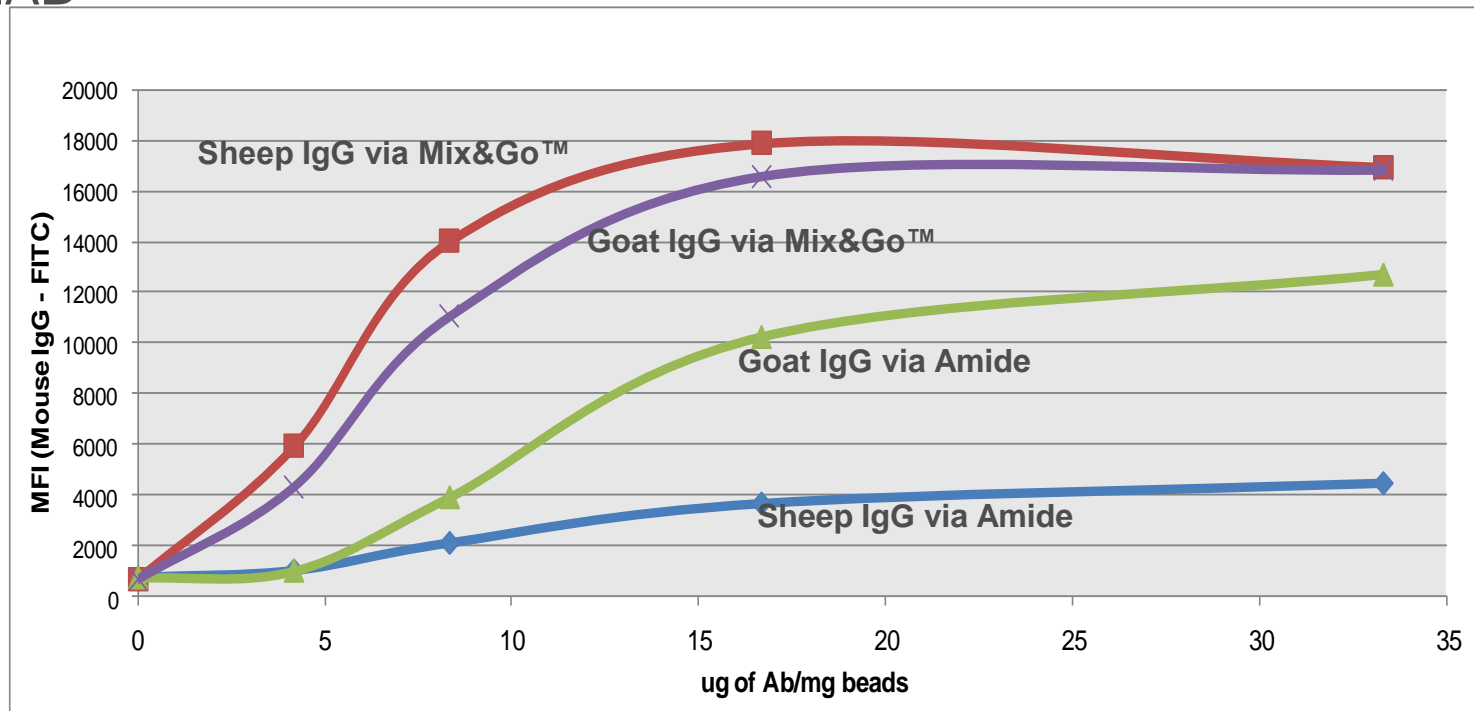
1 hr at 22°C

Tosyl

16 hr at 37°C

Mix&Go™ Improves Coupling Efficiency

Mix&Go™ beads show increased or same performance using less mAB



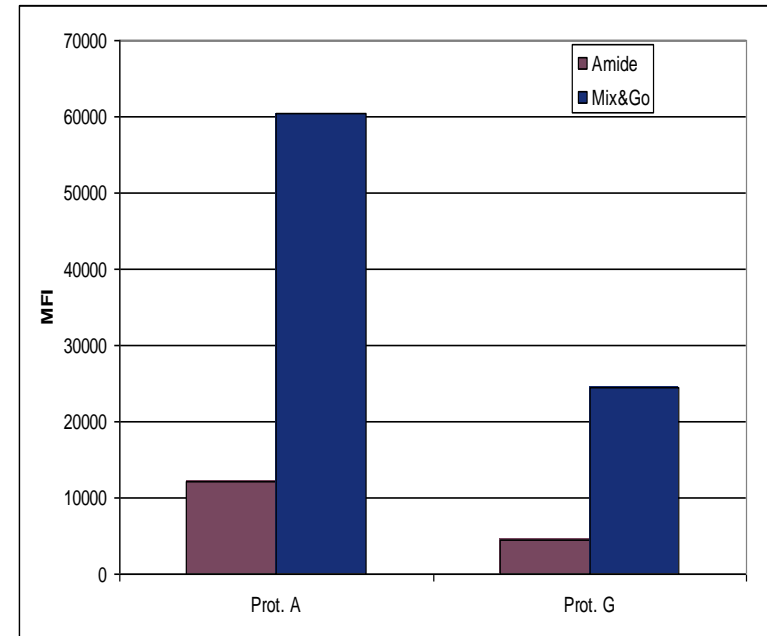
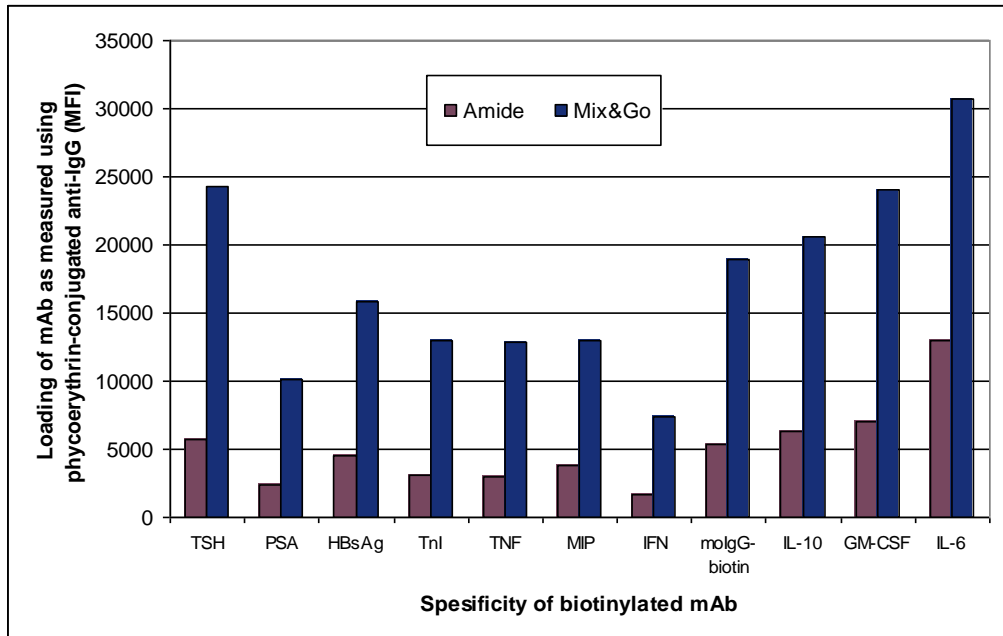
Loading efficiency for 2 different IgGs comparing amide vs. Mix&Go™ coupling on Dynal M270 beads.

Detection via anti-mouse IgG-FITC, coupling at 30 mg/mL bead conc.



Mix&Go™ Is Versatile

Mix&Go™ binds streptavidin and Protein A, G efficiently



Mix&Go™ increases binding capacity of Streptavidin Beads by 3 to 5x compared to amide

Mix&Go™ improves binding capacity of Protein A & G beads by 3 to 5x compared to amide.

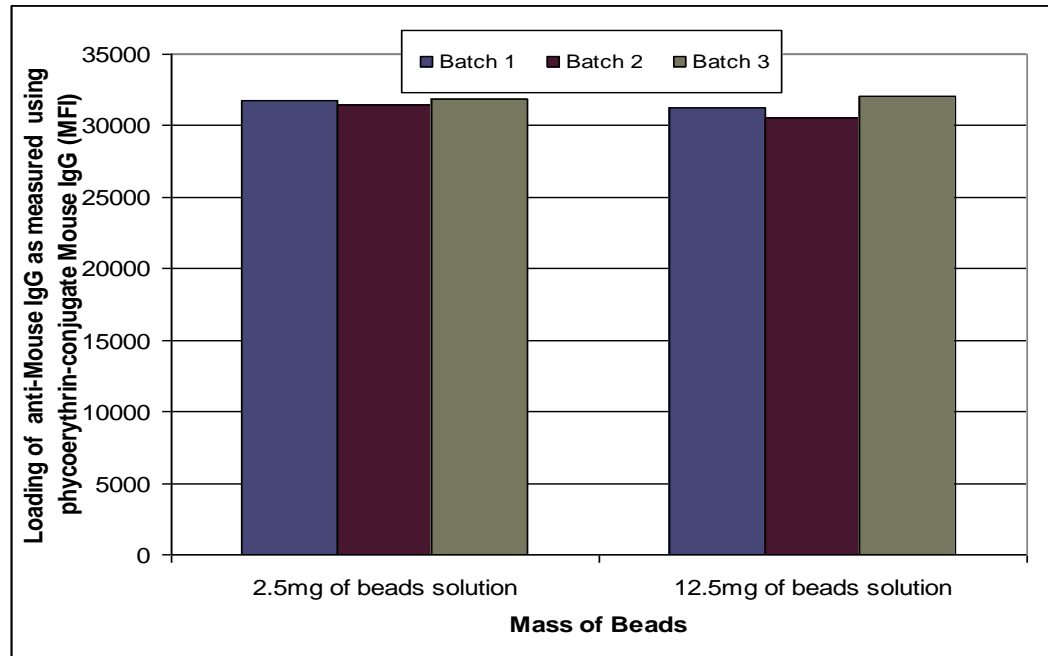
Mix&Go™ Improves Batch Uniformity

Mix&Go™ offers improved batch to **batch uniformity** and **scalability**

Antibody loading variation from Luminex beads produced by 3 operators

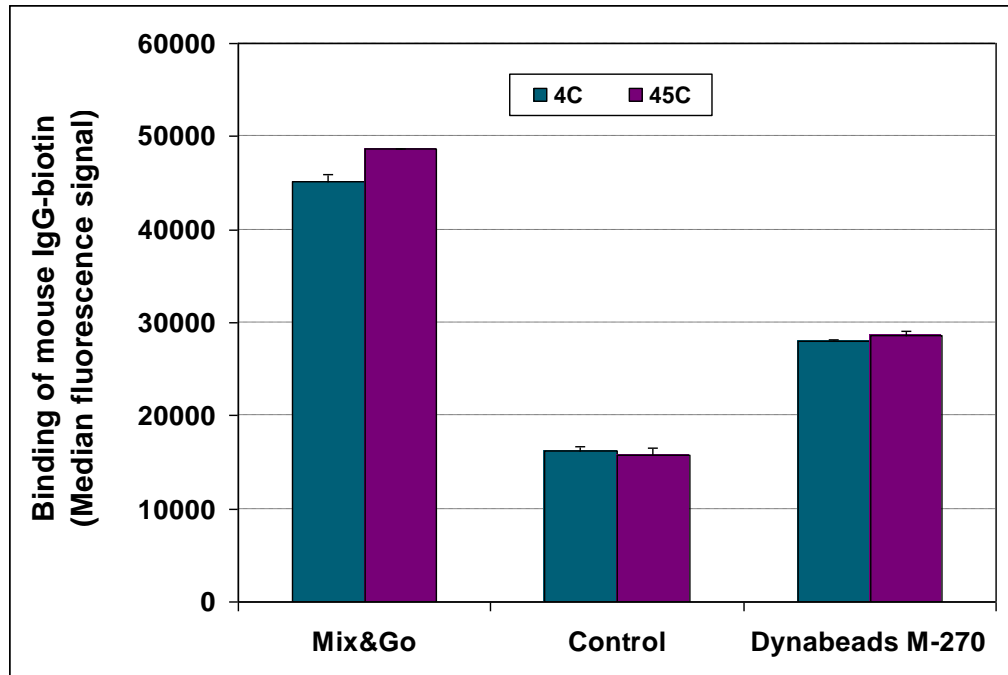
% CV over 3 coupling	IL-3	GM-CSF	CA125	G-CSF	IL-18	IL-1a	MIP-1a	VEGF	Average
Amide Coupling	9.4	11.6	8.7	8.0	15.8	13.1	8.7	4.9	10%
Mix&Go Coupling	0.5	3.6	3.9	2.0	4.3	3.6	1.0	7.6	3%

Antibody loading variation produced at 2 different scales (2.5 mgs vs 12.5 mgs beads)



Protein Binding With Mix&Go™ is Stable

Mix&Go™ is very **stable** in accelerated stability trials



Conditions

3 days at 45°C

Comparing:

- Mix&Go™ streptavidin
- amide coupled streptavidin (Control)
- commercially available streptavidin beads (M270).

Results

- No detectable loss of Streptavidin off beads by PAGE
- Accelerated stability trials (3 mths, 37°C) of Mix&Go™ antibody coupled beads show no loss in sensitivity and dynamic range.
- No detectable cross-talk in multiplex assays

Mix&Go™ Competitive Advantages

- Improves limit of detection and dynamic range of immunoassays
- Requires less antibody per assay reducing COGS
- **Fast and simple procedure**
 - Faster assay development
 - Faster manufacturing
 - Faster assay procedures
- **Broad applicability (different antibodies, streptavidin, Protein A & G, other proteins)**
 - Established procedure can be leveraged across many products
- **Great reproducibility and stability**
 - Easy to scale from very small to large volumes
 - High batch-to-batch uniformity in performance