

PROCEDURE™ CUSTOM MONOCLONAL DEVELOPMENT

ProCode is a recombinant MAb-like technology that overcomes the limitations of traditional hybridoma development. It is based on a proprietary synthetic library and a unique selection process natural to *E. coli*. ProCode's innovative features enable the rapid isolation of target-specific antibodies without the labor intensive screening common to other recombinant and non-recombinant methods.

BENEFITS OF PROCEDURE

High sensitivity and specificity antibodies
 Direct selection of sandwich pairs
 Compatible with lethal or toxic compounds (including cancer and viral antigens)
 Superior control of downstream production

Cost effective at 3g/L yield in *E. coli*
 Short lead-time (6 to 10 weeks)
 Success guaranteed
 No license or royalties

HYBRIDOMA	vs.	PROCEDURE
24 weeks	Project Lead Time	4-10 weeks
Unpredictable	Specificity	Direct Selection
Unpredictable	Affinity (Kd)	10 ⁻⁶ to 10 ⁻¹²
Not guaranteed	Paired Antibodies	Guaranteed
Limited to what can be injected into an animal	Types of Antigens	Peptides, proteins, toxins, tissues, organs, modified compounds
2-4mg	Amount of Antigen Required	<0.5mg
20mg/mouse 35mg/L cell culture	Production Efficiency	3g/L
Ascites & <i>In vitro</i>	Production Method	High-throughput, <i>In vitro</i>
Unpredictable	Stability	Infinite

PROCEDURE NOVEL FEATURES

NOVEL SYNTHETIC HUMAN LIBRARY

Proprietary library generated from light and heavy chain variable domains of IgG
In vivo filters eliminate unwanted aggregation and stops
 Wide diversity obtained through insertion of CDRs and PCR mutagenesis

TAT TRANSPORT AND SELECTION IN *E. COLI*

Twin-arginine translocase (TAT) discriminates between correctly folded and mis-folded proteins

TWO

FLI-TRAP:

- Antigen is co-expressed within *E. coli* with scFv library.
- Suitable for epitope specific scFvs.

SELECTION

MAD-TRAP:

- Library is expressed in *E. coli* then screened against the antigen by FACs or panning.
- Suitable for an unlimited range of targets.

METHODS:

VARIETY OF DETECTION FORMATS CAN BE ENGINEERED TO MEET ANY REQUIREMENT

Bivalent | Full Length IgG | Bispecific | 2-Step Detection Formats



PROJECT OUTLINE

PHASE I

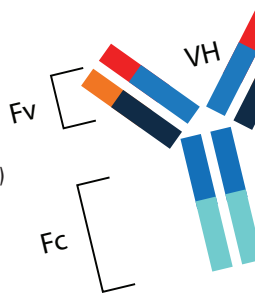
Enrichment

Selection against library one round of enrichment
 Screen positive scFvs (up to 200 colonies) for reactivity (ELISA) and affinity
 Protein expression (4-5mg) from 10 clones (affinity of $\sim 10^6$) provided or progression to Phase II
Success guaranteed – no charge for initial selection if no hits are generated

PHASE II

Affinity Maturation

Two rounds of affinity maturation (PCR mutagenesis)
 FACS and/or ELISA screen (up to 100 colonies) by endpoint dilution
 Determination of affinity (Biacore™)
 Protein expression (4-5mg) from 10 clones (affinity typically in pM range)



ADDITIONAL OPTIONS

Further rounds of selection to increase affinity
 Conversion to *Pichia pastoris*, CHO, mammalian or fusion constructs
 Cloning into full length human antibody IgG1
 Stable cell line development

Biacore™ is a trademark of GE Healthcare.

Meridian Life Science, Inc.

60 Industrial Park Road | Saco, ME 04072
 207.283.6500 • 888.530.0140

5171 Wilfong Road | Memphis, TN 38134
 901.382.8716 • 800.327.6299