

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

CUSTOM POLYCLONAL ANTIBODY DEVELOPMENT

QED is committed to excellence across all facets of our operations, and to responding to the ever-changing needs of our customers. We have been developing monoclonal and polyclonal antibodies for numerous biotechnology and pharmaceutical companies, research institutions, and universities throughout the United States and internationally for over 20 years. We have successfully developed antibodies to small molecules, proteins, and peptides. QED also offers genetic immunization, saving you time and money in the production of your antibodies. QED was the first US company, and is one of the few, to offer this service.

When you develop a custom antibody protocol with QED, we are dedicated to providing quality immunological services. We use New Zealand White females rabbits, bred on our farm, and adult laying leghorn chickens. All of our animals are cared for by qualified personnel to ensure that you are receiving the highest quality service. Our facilities are USDA certified and monitored by our IACUC committee.

We keep our customers well informed of their protocol progress with notices of 1) Project initiation, 2) immunizations, 3) sample delivery schedules, 4) project progress updates and 5) any other factors that would affect the successful completion of your project.

QED offers full-spectrum antibody services including:

- Monoclonal and Polyclonal antibody development
- Bifunctional and anti-idiotypic antibody development
- Genetic Immunization
- Cell banking
- Antibody production in ascites or *in vitro*, using our proprietary high-yield media
- Antigen conjugation to KLH, THY, or BSA
- Assay development
- Antibody purification
- Antibody conjugation with HRP, Alkaline Phosphatase, biotin or FITC

Enclosed you will find 1) Terms and Conditions, 2) Standard Protocols for Rabbits and Chickens, 3) Pricing and Discount Schedules, and 4) a project outline questionnaire.

If you need additional information, a custom price quote, or are ready to take advantage of our services, please contact a QED customer service representative.

We look forward to working with you.

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

Custom Polyclonal Production Terms And Conditions

This contract is between **QED Bioscience Inc.** of 10919 Technology Place, Suite C, San Diego, California 92127 (QED) and _____ of _____ (CLIENT).

Antigen(s)

- A. The CLIENT shall supply to QED free of cost all necessary quantities of antigen, assay protocols (as required and available) and any non-conventional assay reagents for use by QED in generating and screening antibodies produced therefrom for the CLIENT. Antigen(s) shall be supplied be injected without further purification. In the case of synthetic peptide antigens, CLIENT may contract with QED to have peptides synthesized and conjugated to appropriate protein carriers. CLIENT Antigens shall be deemed confidential, not to be disclosed or used for the benefit of any third party or for QED's own benefit other than as contemplated hereunder. QED cannot accept antigens that are pathogenic, toxic, and/or carcinogenic.
- B. Conjugation of antigen(s) to a protein carrier for the purpose of immunization may be performed by QED for an additional charge.
- C. Any material or information provided to QED by CLIENT that is not in the public domain shall be considered proprietary and confidential and shall not be disclosed or provided to any third party without written authorization from CLIENT.

Rabbit Protocol

- A. A standard rabbit protocol shall include two (2) rabbits per antigen. CLIENT shall have the option of adding additional rabbits to the protocol for an additional charge. QED will use their standard protocol (Appendix A) unless CLIENT provides an alternate protocol for use. QED shall provide quality animal care, but in the event that an animal expires prior to project completion, a pro rata reduction in project prices shall be applied.
- B. Serum shall be collected from one (1) pre-immunization bleed and four (4) post-immunization production bleeds. Serum antibody titers shall be determined by QED using CLIENT Antigens and shall be reported to CLIENT in a timely manner. Serum samples shall be provided to CLIENT per CLIENT's instructions to QED.

Chicken Protocol

- A. A standard chicken protocol shall include three (3) chickens per antigen. CLIENT shall have the option of adding additional chickens to the protocol for an additional charge. QED will use their standard protocol (Appendix C) unless CLIENT provides an alternate protocol for use. QED shall provide quality animal care, but in the event that an animal expires prior to project completion, a pro rata reduction in project prices shall be applied.

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

- B. Eggs shall be collected pre-immunization and after each of four (4) immunizations. Eggs will be provided to CLIENT unless other arrangements are made with QED for antibody purification and testing. If testing is requested, results shall be determined by QED using CLIENT Antigens and shall be reported to CLIENT in a timely manner.

Animals, Immunizations, And Collections

- A. QED shall recommend an immunization protocol, although CLIENT shall have the option of providing an immunization protocol for QED's use.
- B. QED may modify the immunization protocol during the course of the project per CLIENT's instructions to QED, however, some variations in immunization or bleeding schedules may result in changes in prices.
- C. Results shall be based on reasonable best efforts.

Reports

- A. QED shall provide periodic written or oral reports as the contracted work proceeds. A final report at the end of the project shall also be provided which shall include a summary of the work performed.

Payment

- A. CLIENT shall receive an invoice for each project following the first immunization, and an invoice for additional project charges, such as shipping, at the end of the project. Charges will be based upon the information in Appendices B, D, and E, as appropriate. Terms are net 30 days.

Agreement

The undersigned parties agree to these Terms and Conditions:

CLIENT _____ Name (Print): _____	QED Bioscience Inc. Name (Print): _____
Signature: _____	Signature: _____
Title : _____	Title: _____
Date : _____	Date: _____

Contact Information

Contact Address	Billing Address
------------------------	------------------------

10919 Technology Place Suite C
800-929-2114 / 858-675-2405

San Diego, CA 92127
Fax 858-592-1509

info@qedbio.com
www.qedbio.com

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

Name: _____	Contact: _____
CLIENT: _____	CLIENT: _____
Department: _____	Department: _____
Building/Room No: _____	Building/Room No: _____
Address: _____ _____	Address: _____ _____
City, State, Zip: _____	City, State, Zip: _____
Country: _____	Country: _____
Phone: _____	Phone: _____
Fax: _____	Fax: _____
Email: _____	Email: _____
	P.O. or credit card # _____

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

APPENDIX A

STANDARD RABBIT PROTOCOL (60 Days)

<u>DAY</u>	<u>ACTION</u>
0	Pre-immunization bleed
1	Primary immunization 500 ug/animal SQ in Complete Freund's Adjuvant
8	Boost # 1 500ug/animal SQ in Incomplete Freund's Adjuvant
22	Production Bleed # 1
29	Boost # 2 500ug/animal SQ in Incomplete Freund's Adjuvant
36	Production Bleed # 2
43	Boost # 3 250 ug/animal SQ in Incomplete Freund's Adjuvant
50	Production Bleed # 3
57	Production Bleed # 4
60	Project termination

- Pre-immunization bleeds average 5 ml serum. Production bleeds average 20-25 ml serum per bleed per rabbit
- Bleed ELISA is done at completion of project at no charge or can be done after each bleed for an additional charge.
- Minimum amount of antigen required for the Standard Protocol is 4.0 mg.
- Additional antigen is required if you request ELISA testing.
- Average yield of serum from the Standard Protocol is 160-200ml.

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

APPENDIX C

STANDARD CHICKEN PROTOCOL (90 Days)

<u>DAY</u>	<u>ACTION</u>
0	Primary immunization 400 ug/chicken IM/SQ in Complete Freund's Adjuvant
8	Boost # 1 400 ug/chicken IM/SQ in Incomplete Freund's Adjuvant
15	Boost # 2 400 ug/chicken IM/SQ in phosphate-buffered saline (PBS)
22	Boost # 3 400 ug/chicken IM/SQ in PBS
29-89	Egg collection and shipping
50	Boost # 4 400 ug/chicken IM/SQ in PBS
90	Termination

- Pre-immunization eggs are collected for each chicken.
- Total amount of antigen required for the Standard Protocol is 6.0 mg.
- IgY purification and antibody ELISA can be done during or at completion of project; see Appendix D for pricing. Additional antigen is required if you request ELISA testing.
- Average yield of eggs from the Standard Protocol is 40-60 eggs per chicken.

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

APPENDIX D

CHICKEN POLYCLONAL ANTIBODY DEVELOPMENT PRICING

PROGRAM 1 (Three Chickens) \$450.00

- Includes Initiation, Immunization, Egg Collection, Termination
- 6mg of antigen required

PROGRAM 2 (Three Chickens) \$790.00

- Includes all Items in Program 1
- IgY purification from 2 pre-immune eggs and 6 immune eggs (additional IgY purification is available)
- 6 mg of antigen required

ADDITIONAL ITEMS

PER DIEM BOARD AND CARE	\$1.82/Day/Animal
EGG COLLECTION	\$18.15/Procedure/Animal
IMMUNIZATIONS	\$14.03/Procedure/Animal
TERMINATION	\$17.00/Animal
ANTIGEN CONJUGATION TO CARRIER PROTEIN	\$200.00/1-2 mg \$375.00/3-5 mg \$600.00/6-10 mg
ASSAY DEVELOPMENT	\$1750.00
YOLK ISOLATION	\$1.00/Egg
IgY PURIFICATION	\$600/12 Eggs
ELISA ASSAY	\$70.00/Plate
AFFINITY PURIFICATION	\$695.00 + \$2.50/mL over 100 mL

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

APPENDIX E

SCHEDULE OF DISCOUNTS FOR POLYCLONAL ANTIBODY DEVELOPMENT PROJECTS

NUMBER OF ANIMALS	DISCOUNT OFF LIST PRICE
2-20	0
21-50	5%
51-100	10%
101-200	15%
>200	Will Quote

The discount may be applied to a single order for multiple projects, or in a cumulative fashion. If applied in a cumulative fashion, the number of animals ordered in a calendar year will be used to determine the discount level.

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

PROJECT OUTLINE QUESTIONNAIRE

If you wish to start your Polyclonal Antibody Development project, please provide the following information. This will assist us in starting your project. Our standard protocol can be modified to fit your specific needs. Please, only one project per order form.

IMMUNIZATION REQUIREMENTS

Animal Requirements	
Species of animal required: (Circle) Rabbit / Chicken	Number of Groups (2 Rabbits/group, 3 Chickens / group) _____
Description of Antigen	
Antigen: _____ _____	Amount of antigen supplied: _____mg
Antigen concentration provided: _____mg/ml (1mg/ml preferred)	Does the antigen require conjugation (Y/N)? _____
Buffer: _____	Carrier Protein Preference? _____KLH _____THY _____BSA

Please send antigens to :

QED Bioscience Inc.
Attn: Jennifer Johnson, Manager of Operations
10919 Technology Place, Suite C
San Diego, CA 92127
1-800-929-2114 Fax 858-592-1509

ANALYSIS REQUIREMENTS

Do you want ELISA testing on samples (Y/N)? _____	Samples to assay: 1. _____ 2. _____ 3. _____
Does a specialized ELISA assay need to be developed? _____	

QED Bioscience Inc.

ADVANCED ANTIBODY TECHNOLOGIES

SHIPPING REQUIREMENTS:

How often would you like samples to be shipped to you?

Weekly _____

Monthly _____

End of Project _____

Shipping can be invoiced or billed directly to your shipping account. Please specify carrier and method of paying shipping charges:

Invoice me for shipping _____ Bill shipping to Account # _____

UPS _____ Federal Express _____ Other (Specify) _____

Shipping Address

Name:

CLIENT:

Department:

Building/Room No:

Address:

City, State, Zip:

Country:

Phone:

Fax:

Email:

Billing Address

Contact:

CLIENT:

Department:

Building/Room No:

Address:

City, State, Zip:

Country:

Phone:

Fax:

Email:

P.O. or credit card #: