Location chosen by Attendees!

All 3 days for Under €1000.00

Preliminary Brochure

Biological Assays Conference

30 September – 2 October 2009, Rome, Italy

Our Expert Presenters:

Nicola Crawford
Rose Gaines Das
Stanley Deming
Camille Dycke
Sian Estdale
Richard Fox
Bassam Hallis
Matthias Hofmann
Hans-Joachim Wallny
Laureen Little
Jens Lohrmann
Peter Rigsby
Jane Robinson
Michael Sadick
Tim Schofield
Bob Singer
Christine Swysen
Thomas Waerner

Meeting Organizers:

Laureen Little
C. Jane Robinson
Hans-Joachim Wallny
Stan Deming
Bassam Hallis

Pre-Conference Assay Design Workshop

This is an entire day devoted to tough Assay Design Topics. No nonsense approaches to solving those typical assay problems; topics include:

- Decreasing positional effects, Calculating number of replicates, number of doses, dose-response curve modeling.
- An afternoon session on developing Assay Acceptance Criteria; how to set them, and what they should be.

Main Conference Key Topics

- **Mini-Sessions to include;**
  - **Host Cell Protein Assays—Development and Qualification for Different Expression Systems**
  - **PCRs as bioassays to support product release and patient monitoring**
  - **USP Chapter updates: Validation and assay design e**
- **Tutorial Sessions: Using VCA as Part of your Validation**
  - **Tutorial on VCA**
  - **Use of VCA in Determining Precision for validation**
  - **Draft USP Chapter <1033> Review**
- **Statistical Tools for Assay Development:**
  Simplex Optimization
  Response Surface Modeling as part of DOE Approaches
- **Case Studies: Developing Neutralising Antibody Assays**
- **Case Studies: ADCC assay development with cell lines**
- **Case Study: Serological assays to support vaccine release**

Not-for-Profit Meeting:

Developed and Run by Scientists for Scientists

Contact us at: www.BEBPA.org Tele: +1-916-729-0109 Fax:1-916-729-2602

BEBPA's 2nd Annual Biological Assay Conference

Pre-Conference Workshop on Assay Design and Assay Monitoring

8:30 – 8:40 **Welcome by Workshop Chair**
C. Jane Robinson, Ph.D, Principal Scientist, **NIBSC**

Session 1
8:40 - 12:00 Design and Analysis of Cell Based Bioassays
Session Chair: Rose Das Gaines, PhD,

This workshop session will give an overview of bioassay design, focusing particularly on design and analysis of cell based bioassays on 96-well micro titre plates. All too frequently bioassays carried out on micro titre plates are analyzed without examination of the data for conformity with the experimental and statistical assumptions on which that analysis is based. This can lead to misinterpretation of the assay results. Examples will be used to illustrate practical approaches to assay designs which increase conformity with the underlying assumptions, and methods of analysis to assess this.

Key topics covered will include:

- Principles of experimental design and their application to bioassays
- Requirements for valid analysis and interpretation of bioassay data and consequences of failure to meet them
- Common problems in applying principles of experimental designs to cell based bioassays
- Practical approaches and advice for design and interpretation of cell based bioassays

12:00 – 1:30 Lunch

Presentation
1:30 – 2:30 **Sneak Preview of USP Assay Design Chapter**
Presenters: Bob Singer, PhD and Timothy Schofield

2:30 – 3:00 Break

3:00 – 5:30 **Setting Assay Acceptance Criteria**
Session Chair: Michael Sadick, PhD, **Aptuit**

Bioassays quantify activity in a relative way, compared to the activity of a reference material. This being the case, the absolute signal values for any particular test sample dilution series (whether those signal values be in terms of visible, colorimetric OD, relative fluorescent units or relative luminescent units), and the consistency thereof, are not as essential as consistency in the relative responses induced by that test sample as compared to those induced by a reference sample. However, in order for a relative activity to be quantified for a test sample, it is vital that all aspects of the dose/response curves for the sample and for the reference meet a series of minimal consistency requirements. It is fundamentally important, therefore, that biological potency assays, especially in vitro bioassays, have built into them criteria by which it can be objectively and consistently determined that the reference and sample dose/response curves behave in an expected manner. Only then can the relative difference between the reference response and the sample response be used to reliably calculate a relative potency. A panel of pass/fail assay criteria must be determined specifically for each bioassay. They ought to be self-contained within each assay plate. Most importantly, they must be able to truly discriminate between a successfully performing/executed bioassay response and a faulty one. The speakers in this session will present work in which appropriate and effective pass/fail assay acceptance criteria have been defined, justified, optimized and utilized to provide the necessary assurance of proper assay performance, such that reliable potency quantifications are determined.

5:30 Workshop Ends

Three Ways to Register

www.BEBPA.org Telephone: +1-916-729-0109 Fax:1-916-729-2602

BEBPA's 2nd Annual Biological Assay Conference

Main Conference, Day 1: 1 October 2009

8:00 Open of Conference: Chair Comments
Laureen Little, **PhD,** , **Quality Services,**

Keynote Address
8:10-8:50 Bioassays:The Journey of ED_{50} to QbD

Potency Assays have been utilized to release biological products since the 1940s. These were animal assays which determined levels of vaccines needed to protect 50% of the animals (ED_{50}) from a challenge. With the advent of new technologies, both analytical and product, the type and format of potency bioassays has broadened.

Session Title: Assay Development
Session Chair: Hans-Joachim Wallny, PhD, Novartis

8:50-9:35 Development of a robust QC ADCC assay based on (transgenic) cell lines

ADCC activity is an important feature of many therapeutic antibodies and accordingly, assessment of effector functions is becoming increasingly important for QC purposes. One of the challenges in developing an assay suitable for QC is the inherent lack of robustness when primary effector and target cells are used. Development of an ADCC assay will be presented that overcomes these limitations by taking advantage of an effector cell line as well as a stably transfected target cell line.

Jens Lohrmann, PhD Prin. Scientist, **Novartis Biologics**

9:35-10:00 Morning Break

10:00 – 10:45 **Case Study: Development and qualification of a qPCR assay for rDNA detection**

The gold standard for the detection of residual host cell DNA (rDNA) in drug substances is the Threshold method (TM). However, for high dose applications of therapeutic antibodies the LOQ of this method is close to the WHO requirement of <10 ng rDNA per dose. Therefore, the application of the highly sensitive quantitative PCR (qPCR) for rDNA detection was implemented. The challenges of using this sequence specific method for quantification of total DNA are discussed. Furthermore, the qualification of the method, including its superior sensitivity are presented

Matthias Hofmann Ph.D, Novartis Biologics (NBx)

10:45-11:30 Case Study: Development and Validation of a qRT-PCR for determination of Influenza A and B in Human Respitory Specimens

Christine Swysen, Ph. D., Manager GCLP, **GSK**

11:30-12:15 **Case Study: Neutralising Assay Design and Validation**

Camille Dycke PhD, Manager BioPotency, **Covance**

12:15-1:45 Luncheon

Session: Statistical Tools for Assay Optimization
Session Chair: Stanley Deming, PhD, Statistical

1:45-2:30 **Sequential Simplex Optimization: An Adaptive Type of Experimental Design**

During the development of a bioassay, it is often necessary to rapidly improve or optimize one or more system performance criteria (responses). Classical experimental designs (*e.g.*, factorial designs) can provide information about the relationships between factors and responses that will eventually lead to improved or optimal conditions, but the amount of time required to carry out the large number of experiments in a classical design can be excessive. Sequential simplex optimization is a type of evolutionary operation (EVOP) that iteratively moves a minimalist experimental design rapidly toward the optimum.

Stanley N. Deming, Ph.D, Consultant, **Statistical Designs**

2:30-3:15 **How Certain is your Optimum? Accounting for Shape and Noise in Design of Experiments (DOE) and Response Surface Modeling**

In response surface methodology (RSM), one is usually interested in estimating optimal conditions based on a limited number of experiments. Existing techniques for constructing uncertainty estimates in such situations have not been implemented widely, due in part to the need to set adjustable parameters or because of limited or difficult applicability to constrained or nonlinear problems. To address these limitations a Bayesian method of determining credible intervals for response surface optima was developed. The approach is straightforward to implement and is readily applicable to the kind of problems that appear in practice.

Richard J. Fox, Ph.D, Codexis, Inc.

3:15-3:45 Exhibit/Poster and Refreshment Break

Session: Developing Host Cell Protein Assays
HCP assays are difficult and time consuming to develop. The rare reagents are extremely important and responsible for the required specificity. This session will bring you two case studies, of two different expression systems with lots of hands-on advice.

Session Chair: Bassam Hallis, PhD, HPA

3:45-4:30**Case Study:HCP for unique expression systems**
Bassam Hallis, PhD, HPA

4:30-5:15 **Case Study: HCP Antibody Selection and Validation for Residuals Analysis**
Sian Estdale, Scientist, **Covance,**

5:15 ***No Host Networking Reception in Bar***

Three Ways to Register

www.BEBPA.org Telephone: +1-916-729-0109 Fax:1-916-729-2602

BEBPA's 2nd Annual Biological Assay Conference

Main Conference, Day 2: 2 October, 2009

8:00—8:05 Chairperson's Opening Remarks
Dr. Laureen Little, Principal Consultant, **Quality Services**

8:45 Update on USP Bioassay Activities
USP General Chapter <111> Analysis of Biological Assays, was written in 1956, and remained undisturbed for decades. In the new millennium, the USP recognized that the chapter could benefit from updating with contemporary perspectives on statistics, biology, and computer-mediated computation. Rising to the challenge of refreshing <111>, statisticians and biological scientists empanelled by the USP have transformed that chapter into a suite of interrelated chapters, with discrete but connected foci on bioassay design, analysis, and validation. As Chair of the three panels working on these chapters, Bob Singer is well situated to provide updates on the status of the USP bioassay chapters. Also, comments received from public review of the chapters will be given voice.
Bob Singer, Statistical Consultant,

Assay Validation
8:50-9:35 Tutorial: Variance Components Analysis: The ABCs of the VCA

Stanley N. Deming, Ph.D, Consultant, **Statistical Designs**

9:35-10:00 Exhibit/Poster and Refreshment Break

10:00-10:30 Break

10:30-11:30 **<1033> Bioassay Validation, Chapter Review**

The current draft of USP Chapter <1033> outlines practical and statistical considerations for the design and analysis of biological assay validations. While the chapter concentrates on the validation of relative potency bioassays, the concepts extend to other formats. The role of fitness-for-purpose is emphasized, relating acceptance criteria on validation parameters to the use of the bioassay for product control and stability monitoring. This presentation will summarize the content of <1033> with special emphasis on statistical considerations

Tim Schofield, PhD, Consulting Statistician, **Biologics Consulting Group**

11:30 – 1:00 Lunch

Session Title: Hands On Session - Case Studies
Session Chair: Jane Robinson, PhD

1:00-1:45 Case Study: Validation of Cell-based Bioassays, Drawbacks and Opportunities
An ideal potency assay reflects the product's mechanism of action and should be sensitive to the proposed product's structural modifications. In other words, selecting the best potency assay format should be based on scientific knowledge of the product-target interactions which elicit the product's therapeutic effect dependent on the assay performance itself described by validation/qualification parameters. Cell-based bioassays may fulfill these needs. This talk discusses advantages and limitations of cell-based bioassays with a focus on multifactor design of experiments and the possible impact of validation parameters on comparability studies as well as release and stability testing of biopharmaceuticals.

Dr. Thomas Waerner, Ph.D. Head of Molecular & Bioassay Methods , Boehringer Ingelheim RCV GmbH & Co KG

1:45 – 2:30 **Poster Talks**
Back by popular demand! 2-4 posters will be selected for 15 minute presentations in the main conference. So submit a poster and come prepared to give a 15 minute talk. Last year attendees and poster presenters alike gained great insight in many bioassay projects

Presenters to be selected day 1 of the conference.

2:30 – 3:00 Exhibit/Poster and Refreshment Break

3:00-3:45 **Serological Methods for Potency Testing Diphtheria and Tetanus Components in Combined Vaccines**
A method for potency testing of diphtheria and tetanus in combined vaccines using a serological model based on the measurement of antibody titres was developed, replacing traditional challenge assays and permitting measurements of both components in the same animals. Problems encountered such as selection of an appropriate reference standard, are discussed. Thus substantial data generated are used to examine different statistical approaches to the assessment of assay validity in parallel line assays.

Peter Rigsby, Principal Statistician, **NIBSC**

3:45-4:30 **Case Study: Proliferation– A Growing Problem for Potency**
Nicola Crawford, PhD **Cambridge Antibody Technology**

4:30-4:45 Chairperson's closing comments and selection on next year's meeting venue

4:45 Conference Adjourns

BEBPA: Who are We? What Do We Aim to Accomplish?

The Biopharmaceutical Emerging Best Practices Association (BEBPA) is a not-for-profit association, founded in 2008, managed by and for the benefit of the biopharmaceutical scientific community. BEBPA provides an open forum for the presentation and discussion of scientific issues and problems encountered in the biopharmaceutical community.

www.BEBPA.org Telephone: +1-916-729-0109 Fax:1-916-729-2602

BEBPA's 2nd Annual Biological Assay Conference

Reserve Your Place Today

Name: Dr/Mr./Ms _____

Email: _____

Job Title _____

Phone Number _____

Department _____

Company _____

Address: _____

Country/Postal Code _____

Please Indicate Payment Method

☐ Enclosed Check (Payable to: BEBPA)

☐ Credit Card

☐ Visa ☐ Master Card ☐ Amex

Card Holder _____

Card Number _____

Signature _____

Expiry Date _____

Hotel Information

Crowne Plaza Hotel Rome–St. Peters

Telephone: 039 06 66420
Fax: 039 06 6637190
www.crowneplazaromehotel.com

Get a special rate if you register by July 15th
Just mention **BEB**

4 Easy Ways to Register

Fill out this sheet and mail to:
BEBPA
PO Box 7087
Citrus Heights, CA
95621
USA

Call:
+1-916-729-0109

Register on line:
www.BEBPA.org
Follow link to upcoming conferences

Fax:
+1-916-729-2602

Enjoy a High Quality Meeting at Not-for-Profit Prices

☐ **3 Day Package ; 2 day conference + 1 Day Workshop - €975.00**

☐ **2 Day Package ; 2 day conference - €750.00**

☐ **Please Sign Me Up for a Poster Presentation - €50.00 in addition to meeting fee**

BEBPA's Inaugural Biological Assay Conference

Special Thank You to Our Sponsors

Statistical Designs

www.statisticaldesigns.com/

BioQuality Newsletter
Www.bioquality.biz

STEGMANN SYSTEMS

www.bioassay.de

Health Protection Agency

COVANCE
THE DEVELOPMENT SERVICES COMPANY

BioAnaLab

BrendanTechnologies
TRUE STATISTICAL RELIABILITY

Become a Sponsor

Fill out this sheet and mail to:
BEBPA
PO Box 7087
Citrus Heights, CA
95621
USA

Call:
+1-916-729-0109

Register on line:
www.bioquality.biz /bebpa (Sponsorship)

Fax:
+1-916-729-2602

Make Sure Your Sponsorship Arrives in Time to Appear on the Definitive Brochure

☐ **Meeting Sponsors:** Your name and logo on all marketing brochures, behind the registration desk and in meeting handouts €1000

☐ **Exhibitors:** Exhibiting Space in registration area for table top booth €2000

☐ **Exhibiting Sponsors:** Includes Both Meeting Sponsors and Exhibitor Benefits €2500

Scholarships Available

Meeting Attendee Scholarship Available!!

Promega is Supporting BEBPA Through Meeting Scholarships. Submitt a Poster and You will be Automatically Eligible for a Free Meeting Attendance.