

INTERNATIONAL ALLIANCE FOR BIOLOGICAL STANDARDIZATION



Adventitious Agents, New Technology and Risk Assessment

An NFID/ACVR Satellite Meeting
May 19-20, 2011 - Baltimore, MD, USA



Organizing Committee

Bill Egan

Carmen Jungbaeck

Ivana Knezevic

John Lewis

Keith Peden

John Petricciani

Isabelle Pierard

Jim Robertson

Becky Sheets

Kathy Zoon

Sponsors

CSL

Bioreliance

Pfizer

Sanofi Pasteur

Overview

- Microbial contaminants have been an issue since the very earliest days of manufacturing biological products
- Issue has been addressed with the introduction of a variety of test over the years
- Recent advances in technology have led to more signals of potential contamination
- Objectives of the meeting are to answer these questions:
 - How do the new techniques enhance safety?
 - How do we interpret positive signals?
 - How do we assess risk and decide on what actions to take, if any?

Program Hi-lites

- Current routine testing – what are we doing now?
- Recent advances in testing – what tests are being explored/applied?
- Examples of finding agents with “new” techniques
- Risk
 - WHO activities & draft guidance
 - Case studies
- Then what?
 - Recommendations
Are there follow-up actions/activities that should be undertaken?

Introduction

- Actual transmission of infectious agents to humans in biological products

John Petricciani, MD

- Actual and potential contamination of biological products during manufacture

Amy Rosenberg, MD

Infectious Agents Transmitted to Humans in Biological Products

Time	Product	Cell / Tissue	Agent / Disease
1900s	Antiserum	horse serum	tetanus
1940s	YF vaccine	human serum chicken eggs	HBV ALV / -
1950s	Polio vaccine	Cutter incident	polio
1960s	Polio vaccine	1° monkey kidney	SV40 / ?
	Transfusion	human blood	hepatitis
1970s	PPF	human plasma	hepatitis B
	Transplant	human corneas	rabies
	Transplant	human dura mater	prions / CJD
	GH	human pituitaries	prions / CJD
1980s	F VIII & IX	human plasma	HIV / AIDS
	F VIII & IX	human plasma	hepatitis A, B, C
1990s	Transfusion	human blood	prions / vCJD
2000s	Transfusion	human blood	West Nile virus
	Transplant	human kidney	HIV / AIDS

Lessons Learned Since 1901

- Be prepared for surprises because:
 - We don't know it all (at least not yet...)
 - No system is flawless even when up-to-date technology is used
- Major source of infectious agents transmitted to recipients of biological products has been humans
- Strict control on manufacturing process (e.g., Cutter) and starting materials (e.g., serum) is critical
- Conventional wisdom at any given point in time is not always right (e.g., 1° MK vs HDC)

Lessons Learned Since 1901

The starting point for assuring products that are free of microbial contamination is the characterization of the starting materials.

If you don't understand what the potential microbial risk factors are, you may not adequately address them in the manufacturing process.