

---

Lecture: free communications

## **The reference laboratory concept in the United States: successfully combining *in vitro* testing services and an education program in a non-profit institute**

*Erin H. Hill, Rodger Curren, Hans A. Raabe*

Institute for In Vitro Sciences, Inc. (Gaithersburg, MD) (USA)

e-mail: rcurren@iivs.org

**Introduction:** The Institute for In Vitro Sciences, Inc. (IIVS) is a non-profit organization dedicated to the advancement of alternative testing methods. IIVS was organized in the US for the purposes (among others) of: 1) "... reducing or eliminating the use of animals in biological research and experimentation through education, training and the development, promotion and performance of non-animal research and analysis" and 2) "... publishing the results of non-animal research and experimentation to establish the validity and reliability of the methods of biomedical research and experimentation...".

**Activities:** The approach that IIVS uses to meet the above-mentioned goals is to operate a high quality laboratory facility that conducts *in vitro* safety and efficacy testing for industrial and government clients (including validation authorities) worldwide. Knowledge of the performance of various test methods and protocols that is gained from having this unique hands-on familiarity is then shared with others through education and outreach programs.

**Research and Testing:** Many different types of *in vitro* assays are conducted in the IIVS laboratory including those using organotypic models, engineered human tissues, or traditional monolayer culture. Currently acute skin and eye irritation assays are most often conducted.

A responsibility that correctly falls on the Institute is to provide information about the relative merits of new methods and models to the scientific community. IIVS strives to gain experience with all types of *in vitro* models, especially those that may commercially compete with one another, so that unbiased information about the performance of the various systems is available. This is especially useful for international researchers who may only be able to conveniently purchase from a supplier in close geographic proximity.

Participation in national and international validation studies (dozens since our founding) – especially those conducted by ECVAM and ICCVAM – is a prime example of an area where IIVS' *in vitro* experience is beneficial. Because of our strong belief in the use of Good Laboratory Practices (GLP) for *in vitro* studies, we have created GLP-compliant protocols for nearly all our studies, and have well over a decade of experience conducting assays in this manner. As we participate in such studies we are providing reference standards which become goals for laboratories newly entering the field.

**Education:** IIVS provides *in vitro* standards through hands-on training sessions conducted several times each year. These courses are taught not only by IIVS staff but also by outside experts. Due to our non-profit status, scientists from other contract research facilities often attend so that they can expand their own non-animal testing services. *In vitro* testing information is also provided through our web site ([www.iivs.org](http://www.iivs.org)), newsletters, and scientific publications.

**Conclusions:** IIVS's not-for-profit status enables us to promote *in vitro* methods and provide reference laboratory activities throughout the scientific community. We are not only a significant technical resource through which industry can meet many of its testing needs, but we also supply unbiased technical information to numerous constituencies world-wide. The overall goal is to accelerate the use and acceptance of *in vitro* methods.

*Keywords:* reference laboratory, *in vitro* testing, GLP's