

# Laboratory Management

Volume 1, Issue III

By Tim Governor, Institutional Chemical Hygiene Officer

Summer Quarter 2001

## Chemicals respected by lab supervisors

Principal investigators (PI's) at Ohio State University were asked to list three chemicals, used in their laboratory, that caused them the greatest concern for health risk. PI's (187) from research, teaching, clinical and analytical labs, from 100 departments responded. The top 10, based on frequency of response, are listed below. PI's were also asked to list the three most frequently used chemicals.

Top 10 Chemicals of Greatest Health Concern		Top 10 Chemicals by Frequency of Use	
Percent of researchers	Chemical name	Percent of researchers	Chemical name
30	<b>Ethidium bromide (EtBr)</b>	23	Ethanol
21	<b>Phenol</b>	15	Sodium chloride
20	<b>Acrylamide</b>	14	Methanol
13	Chloroform	12	Acrylamide
13	<b>Hydrochloric acid</b>	12	Ethidium bromide
11	<b>Formaldehyde</b>	11	Phenol
9	Ether	8	Acetone
7	<b>Methanol</b>	7	Formaldehyde
6	Xylene	6	Agarose
6	Sodium azide	6	Hydrochloric acid

**Boldface** indicates the greatest perceived health risks most frequently used.

## Ethidium bromide tops health risk concerns and frequency of use

Ethidium bromide, has been used since the early 1970's for staining DNA and RNA gels. While simple to use, EtBr is a potent mutagen and should be regarded as a possible carcinogen and reproductive toxin. Measures should be employed to prevent inhalation, ingestion and contact with skin or eyes. Use of this material should take place in a "designated area" per OSHA's Lab Standard. Operations which may produce dust or aerosols should be conducted in a fume hood or glove box. Personal protective equipment recommendations include gloves, splash goggles, lab coat and apron. A Laboratory Chemical Safety Summary for EtBr can be found on page 310 of *Prudent Practices in the Laboratory*. [Www.hhmi.org/research/labsafe/lcss/lcss.html](http://www.hhmi.org/research/labsafe/lcss/lcss.html)



Alternate dyes and stains are available. An excellent summary can be found in the April 17, 2000 edition of *The Scientist*. [Www.the-scientist.com/yr2000/apr/profile\\_000417.html](http://www.the-scientist.com/yr2000/apr/profile_000417.html)