PRECONDITIONING IN BIOLOGY AND MEDICINE

Adaptive Responses / Preconditioning

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1. Abstract Title should be no more than 15 words (with only the first letter of each word capitalized).
2. Authors names and affiliations: Type the name, affiliation, complete address, telephone, fax number and email address for EVERY author listed. Name of the presenting author should be underlined. Name of the presenting author should be underlined.
3. The abstract narrative should be no more than 300 words. Use 12-point Times New Roman or Arial font.
4. If submitting by online or by email, indicate the presenting author on a separate line (Underline format can be lost from online submissions).
5. Email abstracts to mbglavin@umass.edu

For further information and abstract submission, please contact:
Mary B. Glavin
Environmental Health Science
N344 Morrill Science Center
University of Massachusetts
Amherst, MA 01003
Phone: 413-545-1239 Mailbox Option 1
Email: mbglavin@umass.edu

Conference Director: Edward J. Calabrese, Ph.D.

FAXED ABSTRACTS WILL NOT BE ACCEPTED

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SAMPLE ABSTRACT

Hormesis: A Highly Generalizable and Reproducible Phenomenon with Important Implications for Risk Assessment.

Edward J. Calabrese, University of Massachusetts, Environmental Health Sciences, Street Address, City, State, Zip Code, and Tel: Fax: Email:
Linda A. Baldwin, University of Massachusetts, Environmental Health Sciences, Street Address, City, State, Zip Code, and Tel: Fax: Email:
Charles D. Holland, Texas A&M University, Street Address, City, State, Zip Code, and Tel: Fax: Email:

From a comprehensive search of the literature, the hormesis phenomenon was found to occur over a wide range of chemicals, taxonomic groups, and endpoints. By use of computer searches and extensive cross- referencing, nearly 3000 potentially relevant articles were identified. Evidence of chemical and radiation hormesis was judged to have occurred in approximately 1000 of these by use of a priori criteria. These criteria included study design features (e.g., number of doses, dose range), dose-response relationship, statistical analysis, and reproducibility of results. Numerous biological endpoints were assessed, with growth responses the most prevalent, followed by metabolic effects, reproductive responses, longevity, and cancer. Hormetic responses were generally observed to be of limited magnitude with an average maximum stimulation of 30 to 60 percent over that of the controls. This maximum usually occurred 4- to 5-fold
below the NOAEL for a particular endpoint. The present analysis suggests that hormesis is a reproducible and generalizable biological phenomenon and is a fundamental component of many, if not most, dose- response relationships. The relatively infrequent observation of hormesis in the literature is believed to be due primarily to experimental design considerations, especially with respect to the number and range of doses and endpoint selection. Because of regulatory considerations, most toxicological studies have been carried out at high doses above the low-dose region where the hormesis phenomenon occurs.

Presenting Author: Edward J. Calabrese