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**Steven B Kim\*** ([stkim@csumb.edu](mailto:stkim@csumb.edu)), Department of Mathematics and Statistics, 100 Campus Center, Building 53 - S116, Seaside, CA 93955. *A Semi-Parametric Approach to Hypothesis Testing for Hormesis.*

Several animal-based studies in toxicology have shown that low exposures to a toxic agent may lower the risk of cancer outcome which is known as a hormetic effect. Some authors, however, have pointed out a lack of formal hypothesis testing procedures. There are some parametric methods for modeling a hormetic effect at low doses; however we concern about the regression approaches to the hypothesis testing. In particular, due to the impact of model misspecification and leverage effect, a regression model may favor monotonicity despite an empirical trend of a hormetic effect at low doses. To address this issue, we propose a semi-parametric approach to detect a hormetic effect which better tolerates model misspecification and leverage effect at high doses. (Received September 14, 2015)