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| **Supplementary materials****About probit analysis and safety study****Tables for the parameters estimated for LD50 calculation through the probit analyses methods via SPSS program**

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| **Parameter Estimates** |
| **Zeolites** | **Parameter** | **Estimate** | **Std. Error** | **Z** | **Sig.** | **95% Confidence Interval** |
|  | **Lower Bound** | **Upper Bound** |
| **PROBITa** | **mg/kg** | **5.597** | **1.359** | **4.117** | **.000** | **2.933** | **8.262** |
| **Intercept** | **-19.658-** | **4.754** | **-4.135-** | **.000** | **-24.412-** | **-14.904-** |
| **a. PROBIT model: PROBIT(p) = Intercept + BX (Covariates X are transformed using the base 10.000 logarithm.)** |

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| **Chi-Square Tests** |
| **Zeolites** | **Chi-Square** | **dfb** | **Sig.** |
| **PROBIT** | **Pearson Goodness-of-Fit Test** | **1.639** | **8** | **.990a** |
| **a. Since the significance level is greater than .050, no heterogeneity factor is used in the calculation of confidence limits.** |
| **b. Statistics based on individual cases differ from statistics based on aggregated cases.** |

**Linear regression for the probit transformed responses for Zeolites toxicity estimation**

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| **Parameter Estimates** |
| **ZnO NPS** | **Parameter** | **Estimate** | **Std. Error** | **Z** | **Sig.** | **95% Confidence Interval** |
|  | **Lower Bound** | **Upper Bound** |
| **PROBITa** | **mg/kg** | **7.439** | **2.193** | **3.392** | **.001** | **3.141** | **11.738** |
| **Intercept** | **-26.553-** | **7.820** | **-3.396-** | **.001** | **-34.373-** | **-18.733-** |
| **a. PROBIT model: PROBIT(p) = Intercept + BX (Covariates X are transformed using the base 10.000 logarithm.)** |

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| **Chi-Square Tests** |
| **ZnO NPs** | **Chi-Square** | **dfb** | **Sig.** |
| **PROBIT** | **Pearson Goodness-of-Fit Test** | **.522** | **8** | **1.000a** |
| **a. Since the significance level is greater than .050, no heterogeneity factor is used in the calculation of confidence limits.** |
| **b. Statistics based on individual cases differ from statistics based on aggregated cases.** |

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**Linear regression for the probit transformed responses for propolis toxicity estimation**

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| **Parameter Estimates** |
| nanocomposite | Parameter | Estimate | Std. Error | Z | Sig. | 95% Confidence Interval |
|  | Lower Bound | Upper Bound |
| PROBITa | mg/kg | 5.855 | 1.470 | 3.982 | .000 | 2.973 | 8.737 |
| Intercept | -20.051- | 4.994 | -4.015- | .000 | -25.044- | -15.057- |
| a. PROBIT model: PROBIT(p) = Intercept + BX (Covariates X are transformed using the base 10.000 logarithm.) |

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| **Chi-Square Tests** |
| nanocomposite | Chi-Square | dfb | Sig. |
| PROBIT | Pearson Goodness-of-Fit Test | .539 | 7 | .999a |
| a. Since the significance level is greater than .050, no heterogeneity factor is used in the calculation of confidence limits. |
| b. Statistics based on individual cases differ from statistics based on aggregated cases. |



**Linear regression for the probit transformed responses for nanocomposite toxicity estimation**