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## Prenatal exposure to tungsten influences expression of DMBT1, a putative tumor suppressor gene

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### ABSTRACT

We have previously demonstrated that residents of the childhood leukemia clusters of Sierra Vista, Arizona and Fallon, Nevada, are exposed to elevated levels of tungsten and arsenic. The objective of this study is to determine the influence of a prenatal exposure to tungsten and/or arsenic on the expression of DMBT1 in immune tissues. Pregnant C57BL/6 mice were exposed to normalized concentrations of sodium tungstate ( $\text{Na}_2\text{O}_4\text{W} \cdot 2\text{H}_2\text{O}$ ) in aerosol (0.6mg/L) and water (85.2  $\mu\text{g/L}$ ) and/or sodium arsenite ( $\text{AsNaO}_2$ ) in aerosol (21  $\mu\text{g/L}$ ) and water (3.9  $\mu\text{g/L}$ ). Spleen, liver, thymus, and bone marrow were harvested and preserved from 3–4 week old pups for genomic and proteomic analysis. Changes in DMBT1 expression were associated with tungsten exposure. This suggests that a prenatal exposure to tungsten may increase susceptibility to cancer through a Trp53/DMBT1 pathway.

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