

BEING ON THE TRACK OF THIMEROSAL

REVIEW

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The common preservative thimerosal is one of the most important organic mercury compounds human populations are exposed to. It has toxic effect on several cell lines, and it also induces programmed cell death in *in vitro* experiments. Association is suggested between application of thimerosal-containing vaccines and the occurrence of neurodevelopmental disorders, like autism. While specific recommendations were made to eliminate thimerosal from vaccines, consistent evidence is still lacking for an association of exposure and disease. Unfortunately, it is very hard to study the molecular background of complex human diseases directly; however, investigations on more simple model organisms may lead to a better understanding of thimerosal as a possible disease inducing factor.

Keywords: vaccine, neurodevelopmental disorder, autism, programmed cell death

Human exposure to organic mercury compounds

Mercury is considered to be one of the most toxic metals. Humans may be exposed to organic mercury compounds by inhalation, or via oral, or dermal routes. The effects of exposure to organic mercury are primarily neurologic [1], but other organ systems may also be involved, like gastrointestinal, respiratory, hepatic, immune, dermal and renal [2]. The exposure of billions of people occurs from seafood contamination, the methylmercury in fish and shellfish, mercury vapour from amalgam tooth fillings, and ethylmercury in the form of thimerosal (TMS) added as an antiseptic to widely used vaccines [3]. TMS is also common as preservative in cosmetics, ear and nasal drops, tincture of Merthiolate for minor in-

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