

Biotransformation of Methoxychlor by an Intestinal Bacterium *Eubacterium limosum* under Anaerobic Condition

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Methoxychlor, which is a pesticide used as a substitute for DDT, has become environmental concerns due to its strong potency as an endocrine disrupter. In order to know metabolic fate of methoxychlor in the intestinal gut, *Eubacterium limosum*(ATCC 8486), a strict anaerobe from the human intestinal tract that is capable of O-demethylation of several compounds, was used as a model intestinal microbial organism. *Eubacterium limosum* was cultured with 100uM methoxychlor in brain heart infusion(BHI) broth medium at 37°C under the anaerobic condition(90% N₂, 5% H₂ and 5% CO₂) and extracted with ethyl acetate at certain intervals. High performance liquid chromatography was used for the determination of methoxychlor and its metabolite. After 5 days incubation, most of methoxychlor was transformed to one metabolite. Further study is being performed to characterize the metabolite of methoxychlor produced by *Eubacterium limosum* by mass spectrometry and to test for ability of *Eubacterium limosum* to metabolize DDT.

References

1. Hor-Gil Hur, Fatemeh Rafii, Biotransformation of the isoflavonoids biochanin A, formononetin, and glycitein by *Eubacterium limosum*, FEMS microbiology letters, 192, 21-25(2000).
2. Matthew D. Anway, Andrea S. Cupp, Mehmet Uzumcu, Michael K. Skinner, Epigenetic Transgenerational actions of Endocrine Disruptors and Male Fertility, Science, 308, 1466-1469(2005).