

Mode of Action of Ethylene Oxide on Spores of Clostridium Botulinum 62A

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Abstract

SUMMARY—Death of spores of Clostridium botulinum when exposed to gaseous ethylene oxide followed first order kinetics. Supplementation of a synthetic medium with the purine and pyrimidine bases of DNA and RNA indicated, as judged by outgrowth from spores which had received sublethal ETO treatments, that the lethal action of ETO on the spores was through alkylation of the guanine and adenine components of DNA. Observed impairment of RNA and protein synthesis was considered an indirect effect resulting from alkylation of DNA components; however, additional evidence bearing on this point is needed to support a more definite conclusion.