

50-60 percent viability. Since the *conidia* can be kept in the animal for an extended period of time, it is possible to do meaningful feeding experiments in which one can test for presence of mutagenic compounds in the diet. After the *conidia* are recovered, they are tested for presence of spontaneous and induced ad-3 mutations. A more ideal indicator utilizing a forward mutation system in bacteria is presently being developed. It is probable that the newly developed methodology for scoring forward and reverse mutations in cultured cells might also be adopted in this procedure.

In addition to flexibility in selection of indicator organism, almost any laboratory animal can be used. Laboratory animals including rats, mice, and hamsters have been successfully utilized. Not only can we compare mutagenic activity between micro-organisms and mammals, but also between different animal species. It should also be possible to demonstrate any correlation between mutagenicity and carcinogenicity in the same or different animals.

The host-mediated assay is an ongoing procedure that bridges the gap between simple microbial tests and the effects of a potential mutagen in mammals. Similarity between mutagenic activity in micro-organisms and animals, the ability of the mammal to detoxify mutagenic or nonmutagenic agents, and the production of mutagenic metabolites can be determined. Not only can comparisons be made between micro-organisms and mammals, but also between different animal species. It is quite possible to compare mutagenicity and carcinogenicity in the same system with this procedure. However, the host-mediated assay in no way indicates the effect of DNA repair mechanisms of the host in response to specific chemicals, and is only an indirect measure of mutagenicity in terms of the mammalian host.

CITED REFERENCE

- (1) GABRIDGE, M. and M. S. LEGATOR: A host-mediated microbial assay for detection of mutagenic compounds. *Proc. Soc. Exp. Biol. Med.* 130: 831-834, 1969.

Specific locus test. (1, 2)—The specific locus test is based on detection of newly induced mutation in seven coat-color and morphologic loci in mice. The newly induced mutations can either be chromosome deletions or point mutations. In this test, male mice that are homozygous for the dominant trait are given the suspected mutagen and mated with female mice that are homozygous for the recessive traits. In this way, the occurrence of offspring with recessive characteristics is indicative of mutation or loss in the gene.

The following potent mutagenic compounds: methyl methanesulfonate, ethylmethanesulfonate, propylmethanesulfonate, and isopropyl