PHILIP MORRIS U. S. A.

INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

To: Dr. T. Yu and K. R. Sherwood Date: May 9, 1983

From: B. D. Davies and L. H. Thompson

Subject: Trip Report: Conference on the Application of Biological Markers to Carcinogen Testing, Bethesda, Maryland. November 15 - 19, 1982.

The conference was sponsored by the U.S. Environmental Protection Agency (EPA) in cooperation with the National Cancer Institute (NCI), the Environmental Mutagen Society, and the Associated Universities, Inc. The conference was relatively small with attendance composed of 44 invited speakers and 110 registrants. A listing of the affiliations of the speakers was available. Undoubtly, due to the nature of the sponsoring agency, the bulk of the attendees (~ 75 %) were from the EPA, NCI, FDA and NIH. The second largest group was comprised of university associated personnel and the third largest of industrial scientists. Among the industrial sector, pharmaceutical companies were well represented. According to the registration lists, and a casual perusal of the meetings, no representatives from any other cigarette company attended the conference.

The speakers were all asked to submit papers concerning the material they were presenting so that these papers can be compiled into proceedings to be published by April of 1983. The conference consisted of 44 oral presentations and 11 posters. The topics included in vivo and in vitro tests, isozyme pattern alterations, and detection of modified deoxynucleotides in carcinogen modified DNA.

On the whole, the papers fell short of delivering useful information as related to "markers". In fact, some of the papers were just a review of the literature. A few authors even prefaced their talks with the remark, "The material which will be presented has little to do with the meeting's topic, but it will be presented anyway". However,there was some very useful information to be gained, particularly in the monoclonal antibody and detection of modified deoxynucleotide sessions. This information will be included in this report.

Probably, the most informative and useful of the papers presented was that of Dr. Manfred Rajewsky of the University of Essen, Germany. This paper dealt with the detection of DNA components, modified by alkylating N-nitroso carcinogens, through the use of specific monoclonal antibodies (MCA). MCAs can be used to determine the ratios of oxygen verses nitrogen alkylation products, since they differ for most alkylating agents (e.g. Ethylnitrosourea (ENU) = 0.6 and methane sulfonate = 0.005). Simple MCAs directed against each of the known methylated oxygen or nitrogen derivatives would allow a rather simple preliminary classification of unknown compounds. These same antibodies would allow examination not only of the presence of stable DNA alkylation products but also