

together with clinical investigations are now in progress.

Summary. One percent of an aqueous-alcoholic yeast extract protects rat skin against the toxic effects of phenylmercuric nitrate in a dilution of 1:100,000 as determined by respiration measurements. A similar amount of yeast extract does not impair the germicidal efficiency of phenylmercuric nitrate against *S. aureus* in dilutions as low as 1:500,000 under the test conditions. Protection of host tissue against toxic action of germicides with maintenance of germicidal properties is thus suggested.

13748

Failure of Yellow O.B. to Produce Neoplasms.

KANEMATSU SUGIURA.

From the Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York City.

Both butter-yellow (*p*-dimethylaminoazobenzene) and *o*-aminoazotoluene are known to be highly effective in producing liver cancer in rats.¹ Since the former dye has been used to color oils, oleomargarine, and other vegetable fat substitutes for butter, and Yellow O.B. (1-*o*-tolylazo-2-naphthylamine), and Yellow A.B. (1-phenylazo-2-naphthylamine), oil-soluble coal tar dyes are permitted in this country to color foodstuffs, the possibility of their acting in an analogous manner to butter-yellow cannot be overlooked as these substances are somewhat related in structure to butter-yellow and *o*-aminoazotoluene (Fig. 1).

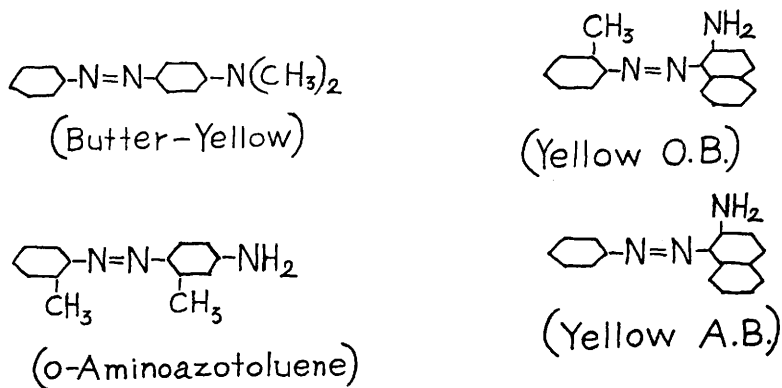


FIG. 1.

¹ Sugiura, K., and Rhoads, C. P., *Cancer Research*, 1941, **1**, 3.

In view of this fact, it seems desirable to determine whether or not ingestion of large amounts of these oil-soluble coal tar dyes would lead to production of liver cancer.

Experimental. In the present series of experiments Yellow O.B. (National Aniline and Chemical Co.) was tested first because it is more commonly used than Yellow A.B. This substance was dissolved in olive oil in the proportion of 6%. Twenty cc of this solution was mixed with 1000 g of coarsely ground, unpolished Texas rice. The basal diet was supplemented with a small slice (about 1 g) of fresh carrot per rat daily. Unlimited water was allowed. Thirty-one young adult rats (about 125 g body weight) of the Sherman stock were used.

The results showed that the daily ingestion of large amounts of Yellow O.B. (each animal consumed 7 to 12 mg of the dye daily) failed to produce liver cirrhosis or tumors in rats during 78 to 259 days' feeding.

The livers of animals fed the Yellow O.B.-rice diet were very pale and yellowish in color. There was no great change in their size or shape. The livers had smooth surfaces and histological examination showed no evidence of tumors, bile duct changes, or abnormal regeneration of the ducts and liver cells, and no abnormal nuclear changes. However, there was a lesion consisting of a zone of central necrosis about the efferent vein involving a maximum of about one-third of the lobule. This acute lesion was not a constant finding, and not incidental to the bronchopneumonia.

The lungs of these animals were very pale with patchy areas of redness, but the heart, kidney and spleen showed no great changes in size, color, or shape. No visceral lesions were seen except for bronchopneumonia. No tumor was found in these viscera or elsewhere.

During the first 80 days the nutrition of the experimental animals was good. During the next 70 days, the general appearance of the animals was fairly good, but in some instances they appeared undernourished and weakened. Individual animals consumed about 6 to 10 g of the basal diet. Of the 31 rats studied 23, or 74%, died between 78 and 259 days. Control rats maintained on a similar diet without Yellow O.B. supplement demonstrated a healthier appearance, and among 18 rats, 6 or 33%, died during the corresponding period of time.

Conclusion. Yellow O.B. (1-*o*-tolylazo-2-naphthylamine) is not a carcinogenic substance.

The author wishes to express his appreciation to Dr. C. P. Rhoads for his interest and valuable advice.