EFFECTS OF VARIOUS ANTI-OXIDANTS ON THE RAT URINARY BLADDER TREATED WITH N-BUTYL-N-(4-HYDROXY-4-METHYLNITROSAMINE: Yasushi KURATA, Michiko SHIBATA, Yukinori MERA, Masao TATSUMATSU, Masao HIROSE (1st Dept. of Pathology, Nagoya City University Medical School, 1 Kawasumi, Mizuho-cho, Mizuho-ku, Nagoya 467)

The effects of various antioxidants on two-stage urinary bladder carcinogenesis in F344 rats initiated with N-butyl-N-(4-hydroxybutyl)nitrosamine (BBN) were examined. Male F344 rats were given 0.05% BBN mixed in drinking water for 4 weeks and then administered 1.5%, 0.75% and 0.38% α-tocopherol (α-TP), 1.0% propyl gallate (PG) and 2.0% tert-butylhydroquinone (TBHQ), respectively, for 32 weeks. The promoting potential of these chemicals were evaluated by measuring the development of preneoplastic papillary or nodular hyperplasia (PN hyperplasia) lesions in the urinary bladder. Administration of TBHQ in the diet significantly increased the incidence and average number per 10cm basement membrane of PN hyperplasia. On the other hand, a dose-dependent promotion or inhibition was not clearly evident in the groups fed α-TP after BBN administration. Treatment with PG after BBN had also no effect on the rat urinary bladder epithelium. The present results indicated that TBHQ is a promoter for the development of the urinary bladder carcinogenesis.

SPONTANEOUS TUMORS OF THE NERVOUS SYSTEM AND ASSOCIATED ORGANS AND/OR TISSUES IN RATS: Akihiko MAEKAWA, Hiroshi ONODERA and Yuzo HAYASHI (Div. Pathology, National Institute of Hygienic Sciences, Kamiyoga 1-18-1, Setagaya-ku, Tokyo 158)

In general, primary tumors in the nervous system of rats are very rare. In this study, spontaneous tumors of the nervous system and associated organs and/or tissues in 395 male and 396 female F344/DuCrj and 200 male and 177 female SLC:Wistar rats were examined. The main neurogenic tumors observed were gliomas and neurinomas, which were detected in both strains of rats. Out of 7 gliomas, 6 were in the brain and 1 in the spinal cord. Histologically, gliomas were classified as 6 astrocytomas and 1 oligodendroglioma. Tumors of the peripheral nerves were all malignant neurinomas, and 2 out of 5 tumors were in the trigeminal nerves and the other 3 were in the spinal nerves. In addition, other types of tumors (3 granular cell tumors in the brain, 1 pinealoma, 4 ganglioneuromas in the adrenal gland, 1 undifferentiated carcinoma in the nasal cavity and 2 chordomas originated from the notochord) were observed. Granular cell tumors were composed of sheets or nests of large, round to oval cells with abundant cytoplasm containing lightly eosinophilic and PAS-positive granules. Chordomas arose in the lumbar region and in the posterior neck region. Histologically, vacuolated tumor cells grew in sheets, nests, and cords, with a lobulated pattern. Part of this work has been published (Maekawa et al., Gann, 75: 784-791, 1984).