

Frequency of spontaneous tumors in Wistar rats in 30-months studies.

Bomhard E1.

Author information

Abstract

Tumors occurring in 450 male and 450 female control rats of the strain Wistar (BOR:WISW (SPF Cpb), breeder: Winkelmann, Borchen) employed in 9 control groups from 7 different 30-month studies were compiled on the basis of histopathology reports. 445 male and 448 female rats were evaluated. The remaining animals were unavailable due to autolysis. A total of 1211 tumors (565 in males, 646 in females) were seen in 716 rats (333 males, 383 females), 251 of which were classified as malignant (100 in males, 151 in females). About 44% of all primary tumors were located in the pituitary and adrenals alone. Average frequencies of primary tumors: pituitary 35.4%, uterus 34.0%, adrenals 26.5%, testes 15.8%, thyroid gland 11.8%, mammary glands 11.4% and 22.5% in females respectively, skin/subcutis 6.3%, ovaries 2.9%, endocrine pancreas 2.5%, hemolymphoreticular system 2.3%, liver 1.9%, heart 1.7% and various other organs showing tumor frequencies of less than 1.5%. Male animals exhibited strikingly more tumors of the adrenals, skin, endocrine pancreas, heart and brain, while pituitary tumors were predominant in females. A comparison of these data with those from 24-month studies in Wistar rats from the same breeder shows a considerable increase above all in the number of primary tumors, the number of tumor bearers as well as the number of tumors in the pituitary, adrenals, testes, mammary glands and heart. An extension of carcinogenicity studies to 30 months probably makes it harder to recognise tumorigenic effects of test substances, at least in some organs, than in two-year studies because of the high and variable spontaneous tumor rates.