possessing various colored hair coats (white, grey, brown, and black), indicated that no constant relation exists between degree of pigmentation and reactivity of a particular strain to the carcinogenic action of tar. In a subsequent investigation dealing with the same question, these investigators were able to produce precancerous as well as cancerous lesions with tar in all 16 strains of mice studied, differing in their tendency toward spontaneous carcinogenesis and in the color of their coat. They concluded that a pigmented skin does not afford a safe protection against the carcinogenic action of tar.

The relatively frequent existence of an hereditary tendency of mice to spontaneous tumor formation in various internal organs (mammary gland, lung, and liver) has offered an opportunity to investigate the possible effect of such a property upon susceptibility to carcinogenic action of tar upon the skin. Reinhard and Candee as well as Kreyberg stated that any constant relationship does not seem to exist between carcinogenic action of tar on the skin and the presence of a genetic susceptibility to a spontaneous cancer development. Reinhard and Candee found a delayed neoplastic response to tar in a strain of mice with a low tendency toward spontaneous carcinogenesis. However, Kreyberg reported the presence of an opposite interrelation, as tar cancers seemed to appear precociously and more frequently in a strain of mice exempt from spontaneous tumors. Dobrovolskaia-Zavadskaia and Olch recorded a similar observation in a brown strain of mice refractory to spontaneous, mammary neoplasia. Parodi; Truffi; and Lynch noted, on the other hand, that the presence of a tendency toward spontaneous, mammary cancers does not interfere with the formation of tar cancers of the skin. Also, the production of these neoplasms does not prevent or influence the development of spontaneous, mammary carcinomas in mice, contradicting a statement made by Murray. The observations made by Parodi; Truffi; and Lynch, concerning the interrelations between tar cancer of the skin and spontaneous, mammary cancer, were substantiated by Bonser and Connal. These two stated that the presence of a tar cancer did not delay the appearance of spontaneous, mammary tumors in mice nor did it diminish their incidence. A similar lack of correlations was found to exist between relative susceptibility to spontaneous, mammary malignancy, and induction of subcutaneous sarcoma by dibenzanthracene and methylcholanthrene in mice (Andervont).

It has been established that application of tar to the skin of mice may increase, by direct or indirect action, the incidence, and hasten the appearance of the so-called spontaneous, pulmonary adenomas and carcinomas.

Murray advanced the claim, at one time, that the skin of mice which surrounded a tar cancer was refractory to the carcinogenic action of tar. This contention could not be substantiated in subsequent experiments by Murray himself or by Parodi; Truffi; and Lynch, who noted that the presence of a tar cancer at one site did not convey an immunity to the production of additional cancers upon some other parts of the skin. It was shown, however, by Bang that