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Prehn R T & Main J M. Immunity to methylcholanthrene-induced sarcomas. *J. Nat. Cancer Inst.* **18**:769-78, 1957.
[National Cancer Institute, National Institutes of Health, Bethesda, MD]

The results of a study of the tumor-specific immunogenicities of 12 different methylcholanthrene-induced mouse sarcomas were reported. Each tumor was inoculated by trocar into a series of syngeneic mice, allowed to grow to a small size, excised, and, after a few days, reinoculated into these now putatively immunized animals. The growth of the challenge tumor implants was compared to the growth of similar implants in nonimmunized control animals. Ten of the tumors were clearly inhibited by the immunization. It was also shown that the immunity was tumor specific and not due to heterozygosity among the mice; skin grafts from a tumor-bearer did not immunize against tumor and *vice versa*. Each tumor appeared to have distinct individual antigens. [The *SCI*® indicates that this paper has been cited in over 870 publications since 1957.]

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I was fortunate, at the end of my internship, to obtain a fellowship in the laboratory of Howard B. Andervant at the National Cancer Institute (NCI). "Andy" had the philosophy, I think rightly, that a postdoctoral fellow should never be assigned a project or told what to do. Andy would answer questions and freely discuss his own projects, but they were strictly his projects and the fellow was required to do his own thing on his own initiative. At first, this was an extremely painful policy, but it was this policy that made possible the work described in the paper. Had there been closer guidance, the work would probably not have been done because, at that time, it was an almost universally held dogma that immunity to syngeneic tumors was theoretically impossible; the tumor was a part of the self and therefore could not arouse an immune reaction.

A number of investigators[1-4] had previously made claims to have demonstrated tumor immunity, but their work attracted almost no attention. Since tumor immunity was known to be impossible, it seemed obvious to most observers that the claimed results must have been due to inadvertent artifacts such as residual heterozygosity among the inbred mice or to deviations during numerous tumor-transplant generations. So pervasive was this opinion that I was warned by the then director of NCI that many careers had been dashed on the rocks of tumor immunology and I would be well advised to find some other object of study. Shortly after that interview, I thought it prudent to leave NCI for a residency in pathology at the US Public Health Service hospital in Seattle!

The difficulties occasioned by finishing the work during residency training—it involved keeping mice in the morgue—can be easily imagined. The tolerance and forbearance of my preceptors, especially my chief, Clermont Powell, were almost beyond understanding.

I think this work attracted attention because the controls were sufficiently good. For the first time most investigators were convinced, despite the established dogma, that tumor immunology had a future. Also, the time was ripe for a change in the prevailing opinion. However, a quarter of a century later, despite the overthrow of the old dogma, the precise role of immunology in tumor biology is still debated. For an admittedly biased and unorthodox current view, see my paper, "The dose-response curve in tumor-immunity."[5]

My coauthor, Joan M. Main, joined my laboratory as an MA-level assistant but soon became a full intellectual collaborator. However, her promising scientific career was soon aborted by marriage and family.

1. **Aptekman P M, Lewis M R & King H D.** Tumor immunity induced in rats by subcutaneous injections of tumor extract. *J. Immunology* **63**:435-40, 1949. (Cited a total of 10 times, 2 of which occurred in 1955-57.)
2. **Foley E J.** Antigenic properties of methylcholanthrene-induced tumors in mice of the strain of origin. *Cancer Res.* **13**:835-7, 1953. (Cited a total of 580 times, 8 of which occurred in 1955-57.)
3. **Gorer P A.** The role of antibodies in immunity to transplanted leukaemia in mice. *J. Pathol. Bacteriol.* **54**:51-65, 1942. (Cited a total of 90 times, 20 of which occurred in 1955-57.)
4. **Gross L.** Intradermal immunization of C3H mice against a sarcoma that originated in that line. *Cancer Res.* **3**:326-33, 1943. (Cited a total of 185 times, 6 of which occurred in 1955-57.)
5. **Prehn R T.** The dose-response curve in tumor-immunity. *Int. J. Immunopharmacol.* **5**:255-7, 1983.