

**Milton N. Goldstein, Ph.D.**  
**Emeritus Member**  
**AACR Member Since 1959**

---

I have been interested in studying a very malignant tumor of young children, Neuroblastoma. There was some evidence that these tumors could differentiate into mature neurons. I established a number of cell lines of this tumor that could be grown *in vitro*. A procedure was established to induce cells of these tumors to mature into neurons that were identical to normal sympathetic neurons after they were grown with drugs and growth factors. One of the lines had receptors for a growth factor, NGF. This protein could transform the very malignant cells into normal appearing neurons. If the cells in culture were injected into nude mice the tumor would grow and metastasize in these mice and kill them. On the other hand, the cells that had been transformed *in vitro* were no longer malignant. These cells could be injected into nude mice and would survive for many months and could then be recovered from the mice.