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Experimental models for production of immune molecules by non-immune cells

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A possibility about production of membrane receptor glycoproteins by non-immune cellular types was proposed. It could be underlined by initial immune differentiation of stem and progenitor cells in the presence of malignant cells or antigens, of viruses and/or viral antigens, as well as of appropriate immunomodulators. Signs of initial myeloid and lymphoid differentiation of non-transfected and non-containing additional gene copy mouse embryonic stem cells (mESCs), co-cultivated with the transfected mESCs, containing additional oncohgene copy, and of further macrophage and plasmatic cells differentiation – in cocultivation with malignant human cervical carcinoma HeLa cells, respectively. Analogical signs were observed in 3T3 mouse embryonic fibroblasts, pre-incubated cultural fluid from previously incubated in it mouse malignant myeloma cells, but also in inoculated with vaccine avipoxviral strains (Poxviridae family), freezed at −800C in the presence of Dimethylsulfoxide (DMSO), thawed and re-incubated embryonic mammalian cells. Furthermore, a possibility about transfer of nucleotide fragments between cellular and viral genome, but also in the opposite direction (from viral to cellular genome) as a result of activation fusion processes on the influence of DMSO and of the drastic temperature changes, was proposed. Analogically, production of immunoglobulins/antibodies by non-lymphoid cells, tissues and organs in such conditions was also suggested. Because the so produced antibodies are out of the germinative centers of the specialized lymphoid tissues and organs, the control in their function is very important for escape of malignant transformation or of degenerative changes. In this direction essential is the role of the small ions and molecules, by influence of various intra- and extra-cellular inter-molecular interactions.

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