established that during the first 4 hours after injection of glycine intact fetuses incorporate more radioactivity into their liver glycogen than do the decapitated animals. The data derived from the use of radioactive glycine implies that the absence of corticosteroids interferes with the normal pathways of glyconeogenesis in the fetus.

D. Enzymes related to metabolism of glucose and to glyconeogenesis are being investigated. The activity of glucose-6-phosphatase at the 21st day of gestation was 4 to 5 times greater in liver of the intact than in the decapitated fetuses. Glucose-6-phosphate dehydrogenase activity of liver is considerably less in the control fetuses. Phosphoglucomutase, glutamic-pyruvic, and glutamic-oxaloacetic transaminases, and glutamic dehydrogenase were also studied.

Genetics

35. Detection and Localization of H-2 Antigen in Cells Grown in Culture

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Introduced by Norman Kretchmer

The H-2 chromosomal locus in mice determines a complex of isoantigens found in normal and tumor tissue and on red blood cells. These antigens are involved in homograft rejection, and their introduction stimulates hemagglutinin production in host animals differing from the donor at the H-2 allele. At least 19 H-2 alleles are thus far known. Phenotypic expression of the H-2 locus, then, may be recognized by homograft rejection or by hemagglutinin production. Hemagglutination is being used by this laboratory as an assay in isolation and characterization of H-2 antigenic products. One aspect of this work deals with antigens of cells from a methylcholanthrene-induced lymphoma arising in a mouse of the inbred strain, DBA/2, homozygous for the allele, H-2^d. The lymphoma cells have been grown in tissue culture for the past 3½ years, and have been recloned on several occasions.

H-2^d antigenic components have been detected in these cells by their capacity to absorb hemagglutinins from an H-2^d antiserum at 8 C and by elution of these antibodies from the cells at 56 C. Hemagglutinin absorption and elution vary with the quantity of cells used; absorption, demonstrated by elution, is readily detectable with only 10^6 cells (0.5 mg. dry weight). The H-2^d allele specifies at least 9 defined antigenic components and the cultured cells studies possess some, if not all, of these. Whereas these cells can almost completely absorb H-2^d hemagglutinating activity from anti H-2^d serum, they remove considerably less H-2^k hemagglutinating activity from anti H-2^k serum; the allele H-2^k determines 8 known antigenic components, 2 of which are also specified by the H-2^d allele.

Recently Herzenberg et al. have purified the H-2 substance, locating antigenic and immunogenic activity in the membrane fraction of mouse liver cells. Attempts to isolate the antigenic components of the lymphoma cells grown in vitro suggest a similar location of H-2 activity. Following cell disruption with ultrasonic waves, membrane fragments were isolated after flotation on KBr (density, 1.22) by high-speed centrifugation. Antigenic activity was demonstrated by elution of isohemagglutinins following absorption of anti H-2^d serum with this membrane fraction.

The presence of these antigenic components on cultured cells almost 4 years after removal from the host animal suggests that such components can be considered as stable genetic markers. Present studies on serotypic diagnosis of cell clones are oriented to selection of antigenic mutants and their use in genetic analysis.

36. Karyotype Analyses on Children: Girl with Gonadal Dysgenesis and Enlarged Phallus Showing 45 Chromosomes Plus "Fragment"

* By invitation.