

SERIAL TRANSFER OF GVH-R SPLENOMEGALY IN CHICKEN EMBRYOS

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Because the immune system is immature, leukocytes from embryonic or newly hatched chickens are not able to induce a GVH-R, evinced by splenomegaly, in embryos of an allogeneic strain.

However it has been shown that, if the newly hatched chicken are themselves undergoing a GVH-R, their blood may induce splenomegaly in recipient embryos (McBride et al. 1966). We now show that leukocytes from prehatching embryos undergoing a GVH-R are already capable of inducing a splenomegaly the magnitude of which depends on the allogeneic combinations, as follows:

Adult donor	Embryo N°1 (13d-20d)	Embryo N°2 (13d-20d)	Splenomegaly
A	→ A	→ A	+
A	→ A	→ B	+++
A	→ B	→ B	+++
A	→ B	→ A	++

The mechanisms will be discussed.

CHANGES IN DEVELOPMENT AND BEHAVIOR CAUSED BY HYPOXIA; C. García and M. Guirao Pérez. Department of Morphological Sciences. Institute "F. Oloriz", University of Granada, 18012 Granada, Spain.

The effects of a prolonged episode of hypoxia during the incubation period of *Gallus domesticus* on growth parameters and certain aspects of behavior were studied. Chronic hypoxia during the third week of embryonic development delayed hatching, increased pre and posthatch mortality rates, and reduced brain and body weight. Motility and general activity were significantly depressed in comparison with controls during the first days of life.

Learning ability was measured with discriminative maze test and several simple programs in standard experimental test boxes. The most noteworthy differences appeared in the acquisition and maintenance of certain programs. Interval programs yielded curves which revealed that hypoxia delayed development and limited perceptive and discriminative abilities. The foregoing leads us to the conclusion that the hypoxic condition applied in the present study affect nervous system functioning with respect to primary processes of acquisition and maintenance of some behaviors.

T+ CELL NUMBER INCREASE IN THE SPLEEN OF CHICKEN EMBRYOS IN GVH-R SERIAL TRANSFER EXPERIMENTS.

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Using a monoclonal antibody directed against chicken T cells we have found an increase of T+ cells in 20-day old chick embryos which were undergoing a GVH-R induced by the injection at 13 days of incubation of allogeneic adult blood leukocytes. A suspension of spleen cells from these embryos was in turn injected into 13-day embryos which were either syngeneic or allogeneic to the donor embryo.

An increase of T+ cells was again observed in these new recipients in spite of the presumed immaturity of the donors. This increase was significant (X 4.5) when the adult original donor was allogeneic to the successive recipients (themselves syngeneic to one another). These results will be discussed in relationship to the splenomegaly reaction and the accelerated maturation of the immune system which it seems to induce.

Sequence Polymorphism of Ribosomal Genes in various Amphibian Genomes. K. Lohmann and V. Steimle. Institut für Biologie I, Universität Freiburg, Albertstraße 21a, 78 Freiburg, FRG.

In contrast to *Xenopus*, few data exist on the structure of ribosomal genes in other lower vertebrates. Therefore we have continued our previous studies (Nucl. Acids Res. 13, 5145, 1985; Dev. Biol. 114, 534, 1986) on rDNA organization in amphibians. The results can be summarized under three aspects.

1. Length polymorphism of non-transcribed spacers is not a general feature of ribosomal genes. Both in urodela and in anura there are species with predominantly homogeneous spacer lengths (e.g. *Amb. mex.*: 3.7 kb, *Trit. helv.*: 10.7 kb; *Alytes obstet.*: 4.4 kb, *Bufo cal.*: 12.2 kb).

2. The R-fragments of 15 amphibian species vary in length between 4.84 kb (*X. laevis*) and 5.66 kb (*S. salamandra*). As the restriction maps show, this sequence variability is not restricted to the ITS but may also affect the coding 28S region by insertion/deletion events.

3. A minor fraction (7-12%) of the 28S genes in the genomes of six out of 10 urodela species studied (*Trit. vulg.*, *T. helv.*, *T. crist.*, *Cyn. pyrr.*, *C. ori.*, *Tar. gran.*) is interrupted by insertions, 0.6-2.8 kb in length, located in a 0.75 kb *Hind* II fragment at the 3' end of the *Eco* RI fragment. Introns have not been found in the 28S genes of 8 anuran species tested, however, are present in rDNA of some fish genomes.