

## ACTIVE INTERFERONOGENESIS IN THE ABSENCE OF AMINO ACIDS FROM CULTURE MEDIA AND ITS INHIBITION BY LACTALBUMIN HYDROLYSATE

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We studied the influence on interferon (IF) production in tissue cultures of the composition of maintenance medium, about which little has become known so far. Eagle's medium or medium 199 have been used the most often; lactalbumin hydrolysate (LAH) was employed in some cases (1).

IF was produced in 6 days old chick embryo cell (CEC) cultures, grown in L14 medium containing casein hydrolysate (2), inoculated with B-Lee influenza virus (3 ID<sub>50</sub>/cell). Three-day CEC cultures and Chikungunya virus (50–100 plaque forming units per flask) were used for IF titration. IF was assayed in culture fluids and its titres were expressed in PID<sub>50</sub> per 0.5 ml (3).

Parallel experiments were carried out with media indicated in the table below; 3 batches of LAH used were: I – Nutritional Biochemicals Corp., Cleveland, Ohio, Control No. 5261; II – Gee Lawson Chemicals Ltd., London, England; and III – Fluka A. G., Buchs, Switzerland, No. 61300.

Maintenance medium	IF titre
Earle's solution pH 7.15 + 0.5% LAH(II)	126
Earle's solution pH 7.15 + 0.5% LAH (III)	72
Earle's solution pH 7.15 + 0.5% LAH (I)	42
Earle's solution pH 7.15 + 0.1% LAH (I)	185
Earle's solution pH 7.15 + 0.05% LAH (I)	290
Earle's solution pH 7.15	501
Eagle's medium pH 7.2	252
Medium 199 pH 7.2	468

The lowest IF yields were obtained with maintenance media containing LAH and the highest in Earle's solution. Decreased LAH concentration in the medium led to increased IF production. Consequently, LAH seemed to inhibit IF production in tissue culture. IF production was not inhibited in synthetic media (Eagle's and 199), in which the amino acid concentration is considerably lower than in medium with 0.5% LAH (4, 5).

To elucidate the possible role of increased amino acid concentration, a medium was prepared with Earle's solution pH 7.15, which contained the same concentrations of the same amino acids as those present in medium with 0.5% LAH (5). Both media were tested in parallel experiments. The synthetic medium with amino acids did not inhibit IF production. Thus, some by-products formed on lactalbumin hydrolysis rather than the amino acid complex exert an inhibitory action against IF production. As shown above, media with LAH of different origin inhibited IF production to a different extent.

The results obtained suggest that active IF synthesis may proceed exclusively on account of endogenous cellular amino acids.

## References

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