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HUMAN CYTOMEGALOVIRUS REPLICATION AND Ca^{2+} RESPONSE IN CELL LINES OF NEURONAL ORIGIN

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HCMV replication and Ca^{2+} response in human neuroblastoma (NB) cells were investigated. NB cells were permissive for HCMV multiplication with a delay of one day compared to virus multiplication in human embryonic lung (HEL) cells. The delay of HCMV multiplication appears to be correlated with a delay in the Ca^{2+} response. The cytoplasmic free calcium concentration ($[Ca^{2+}]_i$) began to increase at 12 h p.i. in HCMV-infected NB cells, while $[Ca^{2+}]_i$ increase in HCMV-infected HEL cells was observed as early as 3 h p.i. On the whole, the level of the increase in $[Ca^{2+}]_i$ in NB cells was about 30% of that in HEL cells. These data suggest that the lower level of the increase in $[Ca^{2+}]_i$ seems to result from the less efficient replication of HCMV in NB cells relative to that in HEL cells. When NB cells and HEL cells were co-cultured, the observed increase in $[Ca^{2+}]_i$ was greater than expected. This synergistic effect did not require direct contact of the two types of cells, suggesting that factor(s) released from HCMV-infected cells is responsible for the synergistic effect on $[Ca^{2+}]_i$. Treatment with TPA of HCMV-infected NB cells resulted in a stimulatory effect on HCMV- induced $[Ca^{2+}]_i$ increase. In conclusion, NB cells are permissive for HCMV replication and the delay in Ca^{2+} response may be a consequence of the lower responsiveness of NB cells to HCMV infection.

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Purification and Characterization of an Acetate specific Esterase from *Streptomyces coelicolor* A3(2)

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Streptomyces coelicolor A3(2) had two isozymes of esterase when stained with α-naphthyl acetate on non-denatured polyacrylamide gel electrophoresis. A comparison of the α-naphtyl acetate specific esterase(ACE-EST) activity between *Streptomyces coelicolor* A3(2) and B6 strain containing hydrogen peroxide resistant gene revealed that the esterase activity in *Streptomyces coelicolor* A3(2) was lower than in B6 strain that was grown in YEME treated with 0.8 mM H_2O_2. An ACE-EST was purified 23-fold, with an overall yield of 12 % through ammonium sulfate, DEAE-sephadex, gel filtration and preparative polyacrylamide gel electrophoresis. The moelcular weight of the enzyme was 32,000 dalton when determined by SDS-polyacrylamide gel electrophoresis and 96,000 dalton when determined by gel filtration. The esterase shown the maximal activity in Tris-HCl buffer at pH 8.0 and 35-40°C.