

TRANSFORMATION AND FOOT AND MOUTH DISEASE VIRUS (FMDV)
PRODUCTIVITY OF SOME BHK CELL LINES

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Recently, a number of BHK cell lines have been found to vary in their susceptibility to some FMDV strains (1). None of these was known to have been transformed by any biological or chemical agent. However, cultured BHK cells may become spontaneously transformed (2, 3). Therefore, we examined whether BHK cell lines of different susceptibility were also expressing different levels of transformation.

The cloned BHK lines AC9 and AA7 (4) were investigated. AC9 cells were susceptible to O₁BFS 1860, C Noville and Asia 1 Iran 1/73, whilst AA7 would only support O₁BFS 1860 (1). For comparison, normal BHK monolayer cells and the polyomavirus-transformed BHK cell lines PyY and Py6 were examined. Their transformed status was measured by determining their colony-forming efficiencies (CFE's) in soft agar (2). AA7 and Py6 cells exhibited the highest levels of transformation, BHK monolayer cells were the least transformed with a CFE of 2%, and were susceptible to all three viruses. AC9 and PyY cells showed intermediate levels of transformation with CFE's of 20% and close up to 13%.

Low susceptibility to the test FMDV strains was associated with high levels of transformation, while high susceptibility was associated with a low level of transformation. At the intermediate levels of transformation displayed by AC9 and PyY cells, transformation by polyomavirus may have resulted in earlier loss of susceptibility than with spontaneous transformation. A number of agents may cause transformed cells to revert to a phenotype resembling normal cells. Amongst these are Thioproline (4), cyclic AMP in the presence of thiophylline (5), and fibronectin (6). The experimental cells were treated with these agents under the appropriate conditions (4, 5, 6), but there was no effect on their morphology, growth behaviour or FMDV susceptibility (Results not shown).

BHK cell line	CFE ^a	Maximum FMDV yields					
		Infectivity ^b titre			CF-antigen ^c titre		
		O ₁ BFS 1860	C Noville	Asia 1 Iran 1/73	O ₁ BFS 1860	C Noville	Asia 1 Iran 1/73
BHK monolayer	2	7.2	7.7	7.7	55	59	74
PyY	13	7.8	5.0	<4.1	26	<7	<7
AC9	20	7.8	7.8	7.2	111	148	79
Py6	49	6.9	5.0	4.7	46	<3	<3
AA7	53	7.2	5.5	<4.8	90	<8	<9

^a CFE = colony forming efficiency = no. of colonies per plate, per cent of total cells per plate.

^b Infectivity titre = log PFU/ml (0 hr infectivity titre \approx 5.0 log PFU/ml).

^c CF-antigen titre = CFU/10⁶ cells.

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