

Colindale viricidal study on Matoke Reactive Oxygen® gel

Introduction

This report summarises the results of a short investigation by Public Health England, Colindale. The work was undertaken on two early prototypes of Matoke's RO® technology against herpes simplex virus (HSV).

Method

Description of viricidal assay:

- 50µg RO® + 50µL virus incubated at 37° C for 1 hr.
- Sample diluted at 10⁻², 10⁻³, 10⁻⁴, 10⁻⁵
- Dilutions used in plaque reduction assay
- No. of plaques in each well shown in spreadsheet

Description of cytotoxicity assay:

- 50µg RO® diluted 10⁻², 10⁻³, 10⁻⁴, 10⁻⁵
- Incubated on cells for 2 days
- Live and total number of cells counted (viability = live/total*100%)

Results

The results show that both RO® gels are strongly viricidal in both experiments. The cytotoxicity experiment has been undertaken once and needs to be repeated. However, the preliminary results show that RO1 is highly cytotoxic at 10⁻² and both are cytostatic at 10⁻², 10⁻³ and 10⁻⁴.

Acknowledgement

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RO1				RO2			
dilutions	well 1	well 2	well 3	dilutions	well 1	well 2	well 3
-2	*	*	*	-2	*	*	*
-3	0	0	0	-3	0	0	0
-4	0	0	0	-4	0	0	0
-5	0	0	0	-5	0	0	0
*due to partial lack of cells, no stain							
Control							
dilutions	well 1	well 2	well 3	Average			
-2	108	128	106	114			
-3	14	12	15	13.66667			
-4	3	2	2	2.333333			
-5	0	0	1	0.333333			
No product							
dilutions	well 1	well 2	well 3	Average			
-2	160	158	164	160.6667			
-3	28	22	18	22.66667			
-4	6	4	1	3.666667			
-5	1	0	1	0.666667			

Figure 1 Assay results for RO1 and RO2

	Live				Total				Viability				
	rep1	rep2	Ave	std dev	rep1	rep2	Ave	std dev	rep1	rep2	Ave	std dev	
DMEM	1300000	2100000	1700000	565685.4	1400000	2600000	2000000	848528.1	92.9	80.8	86.8	8.5	
Control	-2	1200000	880000	1040000	226274.2	1300000	1000000	1150000	212132	92.3	88.0	90.2	3.0
	-3	2700000	2400000	2550000	212132	2800000	2600000	2700000	141421.4	96.4	92.3	94.4	2.9
	-4	3400000	2800000	3100000	424264.1	3600000	3000000	3300000	424264.1	94.4	93.3	93.9	0.8
	-5	2100000	1300000	1700000	565685.4	2200000	1500000	1850000	494974.7	95.5	86.7	91.1	6.2
RO1	-2	120000	70000	95000	35355.34	370000	350000	360000	14142.14	32.4	20.0	26.2	8.8
	-3	380000	380000	380000	0	400000	600000	500000	141421.4	95.0	63.3	79.2	22.4
	-4	430000	780000	605000	247487.4	470000	850000	660000	268700.6	91.5	91.8	91.6	0.2
	-5	1800000	2200000	2000000	282842.7	2000000	2400000	2200000	282842.7	90.0	91.7	90.8	1.2
RO2	-2	320000	360000	340000	28284.27	390000	400000	395000	7071.068	82.1	90.0	86.0	5.6
	-3	450000	570000	510000	84852.81	760000	730000	745000	21213.2	59.2	78.1	68.6	13.3
	-4	460000	690000	575000	162634.6	660000	790000	725000	91923.88	69.7	87.3	78.5	12.5
	-5	1600000	1700000	1650000	70710.68	1800000	2000000	1900000	141421.4	88.9	85.0	86.9	2.7

Figure 2 Cytotoxicity assay results for RO1 and RO2

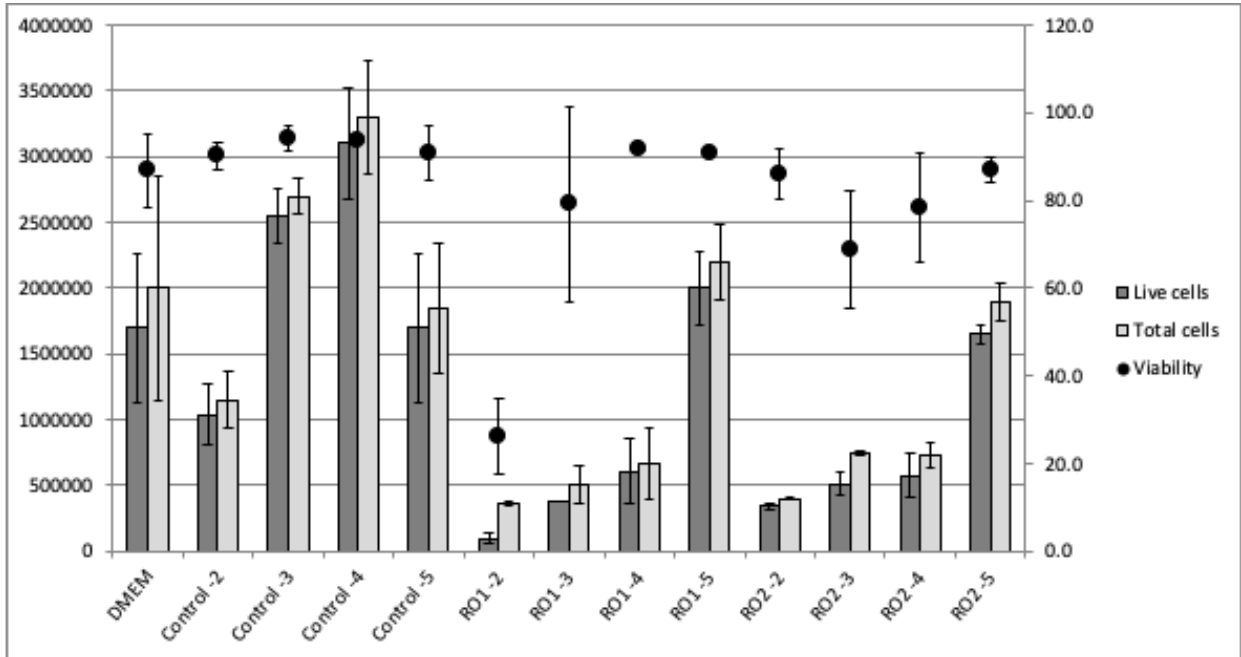


Figure 3 Cytotoxicity assay results for RO1 and RO2