

Sensitivity of Herpes Simplex Virus Types 1 and 2 to Three Preparations of Human Interferon

Data Base

Legend. Sensitivity of herpes simplex virus (HSV) types 1 and 2, Sindbis virus, and vesicular stomatitis virus to three preparations of human interferon (HuIFN).

Viral strains	Titer of HuIFN (units)		
	NDV-induced leukocyte HuIFN	Poly I:C-induced fibroblast HuIFN	PHA-induced leukocyte HuIFN
HSV type 1			
McIntyre	260 ± 453	1,720 ± 786	30 ± 33
E 115	310 ± 236	1,200 ± 258	30 ± 36
E 337	580 ± 378	3,570 ± 1,696	140 ± 251
HL 3	450 ± 241	1,950 ± 1,542	100 ± 148
HL 4	350 ± 310	2,010 ± 1,071	70 ± 96
HL 9	650 ± 707	2,070 ± 1,532	60 ± 79
HL 17	400 ± 177	3,230 ± 861	150 ± 184
HL 34	1,070 ± 933	1,900 ± 551	30 ± 23
HG 9	960 ± 1,445	1,490 ± 370	160 ± 167
Wilson	1,590 ± 2,657	3,690 ± 1,258	100 ± 127
Mean of means ± SEM	660 ± 402	2,280 ± 838	90 ± 48
HSV type 2			
MS	3,790 ± 4,360	3,410 ± 978	180 ± 114
X-79	1,800 ± 1,810	5,710 ± 5,267	90 ± 22
HG 43	3,520 ± 3,371	13,190 ± 9,271	160 ± 4
HG 44	2,790 ± 2,345	3,820 ± 1,264	170 ± 112
HG 53	530 ± 392	3,410 ± 1,330	ND
Heeter	1,840 ± 837	6,370 ± 4,022	150 ± 79
Holt	2,170 ± 1,421	4,200 ± 474	170 ± 88
Turner	1,570 ± 1,945	5,810 ± 1,579	160 ± 83
Jensen	970 ± 725	14,900 ± 12,363	120 ± 89
Mean of means ± SEM	2,110 ± 1,029	6,760 ± 4,047	150 ± 28
Sindbis virus	1,450 ± 617	4,350 ± 1,857	90 ± 31
Vesicular stomatitis virus	1,140 ± 81	4,160 ± 614	ND

NOTE. A 50% plaque-reduction end-point assay was used to test each viral strain against duplicate 1-ml aliquots of serial fourfold dilutions of HuIFN in human foreskin fibroblasts. The three HuIFN preparations were induced by Newcastle disease virus (NDV), polyinosinic-polycytidylic acid (Poly I:C), and phytohemagglutinin (PHA). HSV strains designated McIntyre, E 115, E 337, MS, and X-79 are multiply tissue culture-passaged laboratory strains; the remaining strains are recent clinical isolates (HL = oral isolates; HG and other strains with names = genital isolates). The international reference HuIFN (National Institutes of Health, Bethesda, Md.), with a designated titer of 20,000 units, was titrated at 20,100 units against Sindbis virus in this assay system (mean of nine experiments). Data are expressed as the mean ± sd of three to five experiments. ND = not done.

Summary

Ten isolates of herpes simplex virus (HSV) type 1 and nine isolates of HSV type 2 were tested against virus-induced (α), fibroblast (β), and mitogen-induced (γ) preparations of human interferon (HuIFN). HSV type 2 was slightly more sensitive and HSV type 1 somewhat less sensitive to all three preparations of HuIFN than Sindbis and vesicular stomatitis virus—both considered to be quite sensitive to HuIFN. HSV type 2 was significantly more sensitive than HSV type 1 to each of the HuIFN preparations ($P < 0.01$; Mann-Whitney rank-sum test). Clinical isolates did not appear to differ from laboratory strains. These results indicate that both HSV

types 1 and 2 are sensitive to the three different preparations of HuIFN. HuIFN may have a role in natural recovery from and may have potential as an antiviral chemotherapeutic agent in HSV infections in humans.

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