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Cover photograph (Copyright © 2014, American Society for Microbiology. All Rights Reserved.): Sensory trigeminal ganglia (TG) neurons are capable of responding to beta interferon (IFN- β), but the intrinsic IFN-driven response to infection is not sufficient to control herpes simplex virus 1 (HSV-1) replication. Primary TG neurons isolated from adult mice provided a relevant *in vitro* platform to study HSV-1 infection. The immunofluorescence image shows IFN-treated TG neuron cultures in which the majority of neurons (labeled by β III-tubulin, red) exhibit productive HSV-1 infection (labeled by the HSV-1 lytic protein, ICP0, green, with nuclei labeled in blue). (See related article in September 2014, vol. 88, no. 17, p. 9991.)