

## **Tweak to pritelivir allows treatment of latent herpes infections**

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A team of researchers at Innovative Molecules GmbH, working with several other institutions in Germany, has developed a small-molecule therapy for the treatment of latent herpes simplex virus infections. In their paper published in the journal *Science Translational Medicine*, the group describes tweaking a drug used for treating active herpes infections for treatments of both active and latent herpes infections in rodents.

Herpes is a <u>viral disease</u> that can affect the skin and sometimes the nervous system. The oral version of the disease is called HSV-1 and the genital version HSV-2. People with the disease typically exhibit cold sores and can experience itching or pain—sometimes, such as with infants or people with compromised immune systems, the disease can become life threatening if it impacts the nervous system. The disease has two states: active and dormant. As the names suggest, symptoms generally appear during active periods and cease during dormant times. Treatment for the disease works only for active infections—therapies typically target viral DNA polymerase. Such treatments do not work for latent infections, because the viruses hide in the nervous system where the drugs cannot reach them. In this new effort, the researchers have tweaked a drug previously developed by Innovative Molecules called pritelivir—it has been used to treat active herpes infections, but does so in a different way: by targeting a different enzyme—it unwinds the viral DNA strand, rather than reducing its ability to build its DNA. It was chosen for tweaking due to its small size.

The tweaking by the team involved changing out a sulfonamide for a sulfoximine to remove undesired off-target effects. They also changed one of the aromatic groups to make the molecule even smaller, allowing



it to enter the central nervous system. The team has named the new therapy IM-250.

Testing of the new therapy showed it prevented death in mice that were given lethal loads of HSV-1 viruses. They also found that it reduced symptoms in <u>guinea pigs</u> infected with HSV-2 and prevented the reemergence of symptoms even after the <u>therapy</u> was stopped.

**More information:** Christian Gege et al, A helicase-primase drug candidate with sufficient target tissue exposure affects latent neural herpes simplex virus infections, *Science Translational Medicine* (2021). DOI: 10.1126/scitranslmed.abf8668

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