

Toward a fast, life-saving test for identifying the purity of heroin

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A sample of black tar heroin. Credit: US Drug Enforcement Agency

Scientists in Spain are reporting an advance toward a new method for determining the purity of heroin that could save lives by allowing investigators to quickly identify impure and more toxic forms of the drug being sold on the street. Unlike conventional tests, it does not destroy the original drug sample, according to their report. It is scheduled for the Oct. 1 issue of *ACS' Analytical Chemistry*.

In the new study, Salvador Garrigues and colleagues point out that the purity of heroin can vary widely, since pushers often mix it with chalk, flour, or other "cutting agents." Because heroin users do not know the exact purity of the drug, they are more at risk for overdose and even death. Conventional tests for determining the purity of street heroin involve destructive and time-consuming sample preparation, the

scientists say.

They studied 31 illicit drug samples from Spain that contained six to 34 percent heroin. The scientists tested the samples using the new analytical method, called Diffuse Reflectance Near-Infrared Spectroscopy (DR-NIR). It involves shooting a beam of infrared light into a sample to determine its chemical composition based on the wavelength of light emitted. The method quickly and accurately determined the chemical content of the samples without any prior sample preparation, the scientists say.

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