

Fentanyl

Fentanyl is a synthetic narcotic analgesic of high potency and short duration of action. While fentanyl has all the properties of morphine, it is structurally different and therefore cannot be detected by screening tests for morphine and related opiates.

Fentanyl and its analogs, such as acetylfentanyl, have become a concern for potential abuse.

Fentanyl compliance monitoring and urine drug testing are becoming increasingly necessary.

Every year new fentanyl analog compounds, or fentanyls, appear on the drug scene.

Development of immunoassays dedicated for screening individual molecules is challenging due to the short-lived presence of these compounds on the recreational drug market. . Therefore, manufacturers are investigating the detecting capabilities of the test kits to determine the cross-reactivity of fentanyl analogs (2-fluorofentanyl, acetylfentanyl, acrylfentanyl, carfentanil, cyclopropylfentanyl, tetrahydrofuranylfentanyl, furanylfentanyl, ofentanil, valerylfentanyl)

As a result, testing laboratories struggle to find the ability to detect all potential fentanyl and fentanyl -like compounds.

This latest epidemic of synthetic fentanyl analogs has added to the escalating pressure on forensic toxicology laboratories to increase the scope of analytes detected in routine comprehensive drug screens and to improve sensitivity by significantly lowering levels of detection. This comes on the heels of other outbreaks of synthetic compounds including synthetic cannabinoids, that have already negatively impacted many forensic toxicology laboratories. Most standard ELISA drug screens do not adequately detect the majority of synthetic compounds being found. By adding more specific ELISA assays to already large drug screening panels increases the amount of labor, time, and cost necessary to complete these drug-related cases. Synthetic fentanyl analogs are the most potent substances to enter the illicit drug market. Only time will tell if these extremely toxic compounds will end drug users' attraction with lethal highs or fuel the search for more potent, and ultimately deadly, synthetic drugs.

In addition to the drugs listed on the package insert, the following drugs will cross-react with the fentanyl test:

- 1. Perphenazine – Anti-Psychotic-Schizophrenia / Nausea / Vomiting / Ethanol withdrawal**
- 2. Trazadone – Antidepressant**
- 3. Buspirone – Antianxiety / Depression**
- 4. Droperidol – Antiemetic / Vomiting-Nausea / Motion Sickness**
- 5. Ciprofloxacin – Antibiotic**
- 6. Risperidone – Anti-Psychotic**
- 7. Paliperidone – Anti-Psychotic**

These are the results of the manufacturer's evaluation with existing drugs, there may be other undiscovered drugs that will cross-react with it.