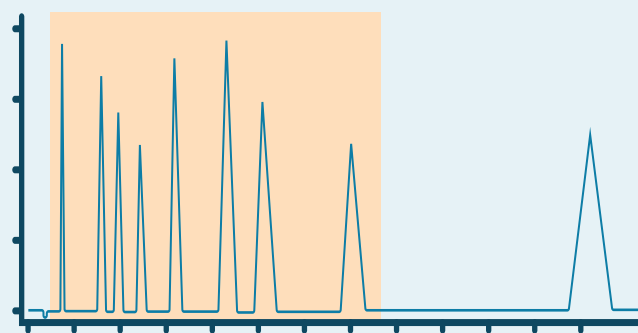
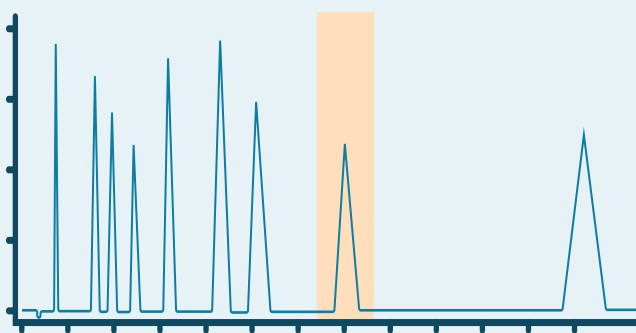


# Overcoming NPS screening challenges in the forensic laboratory

Novel psychoactive substances (NPS) are synthetic compounds that are designed to mimic the effects of traditional prescription drugs. The use of these highly potent substances can lead to severe intoxication and overdose fatalities. The detection of NPS poses a challenge to forensic laboratories due to the variable nature of their composition and potency. As a result, these structurally-related compounds often go undetected since they are not part of the panel of drugs routinely screened for in targeted workflows. As a result, non-targeted approaches are often required to detect the presence of these emerging substances. The differences between these two approaches are listed below:



## Analysis window



### Targeted screening approach

- Monitor well-defined compound list
- Positively identify compounds on the list using appropriate criteria. New compounds can be added to the list to extend screening capabilities

### Non-targeted screening approach

- No list of targeted compounds is available
- Better with comparison to look at differences and propose their identities
- Confirm and add to target list
- Newly discovered compounds can be added after they have been characterized
- Retrospective analysis (or data mining) of previously-acquired data can be performed to look for the presence of newly-added/characterized compounds