



Quality Division Use Only

Quality Tracking #:	<input type="text" value="2022-065"/>	Classification:	<input type="text" value="Corrective Action"/>
Non-Conformance Level:	<input type="text" value="Class I"/>	Section:	<input type="text" value="Seized Drugs"/>
Date of Discovery:	<input type="text" value="12/12/22"/>	Date of Incident:	<input type="text" value="12/12/22"/>

Forensic Case Number(s), if applicable: 2022-03153	Agency Case Number(s), if applicable: 032734222
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Description of Non-conformance:

An item analyzed by the Seized drugs section was incorrectly identified and reported as a controlled substance. Although this item was reported as alprazolam, it should have been reported as "no controlled substance identified" because it was later correctly identified as 4'-chloro deschloroalprazolam, which is an uncontrolled isomer of alprazolam.

Additional Information/Follow-Up:

The 4'-chloro deschloroalprazolam compound is an emerging designer benzodiazepine that is an isomer of alprazolam. It has the same molecular weight as alprazolam but with structural differences which makes it difficult to differentiate between the two compounds. While alprazolam is a controlled benzodiazepine, the 4'-chloro deschloroalprazolam isomer is not currently controlled either at the federal or state level.



Summary of Root Cause Analysis:

Note: Incidents are documented for tracking purposes and trend analysis. Root Cause Analysis is not required for incidents.

Identifying novel compounds presents an ongoing risk to the Seized Drugs section. As new compounds are designed and introduced globally, labs are challenged to be able to identify them. These challenges include being aware that there is a new emerging compound in the market and having test methods available to identify it if the compound should appear in the local area.

The first published report of the 4'-chloro deschloroalprazolam isomer being identified in a case was from Australia in June 2022 (Trigg et al. Drug Test Anal 2022; 14:1672-1680). This isomer was reported to the National Forensic Laboratory Information System (NFLIS) for the first time between July 1, 2022, and September 30, 2022 (https://www.nflis.deadiversion.usdoj.gov/nflisdata/docs//NFLIS_Snapshot_Sept_2022.pdf). While this demonstrates that there are mechanisms of communication around the identification of novel compounds, the Seized Drugs Manager was unaware of this particular novel compound being seen locally prior to the communication from the HFSC Toxicology Manager.

A possible mitigating action would be the establishment of a local, possibly state level, network among the seized drugs laboratories to communicate regional drug trends.

Actions Taken:

HFSC became aware of the possible presence of this isomer in case samples on October 31, 2022, when a Toxicology outsource laboratory informed HFSC of the possible presence of 4'-chloro deschloroalprazolam in six case samples that had been outsourced to the laboratory. The outsource laboratory also communicated they could not confirm the presence of 4'-chloro deschloroalprazolam because they did not have an identification method for the novel drug.

The Toxicology Manager informed the Seized Drugs Manager about this issue on November 8, 2022. The Seized Drugs Manager researched more information on this isomer and ordered a reference standard to characterize and incorporate its identification and differentiation from alprazolam and other benzodiazepines into the routine analytical scheme.

In addition, the Seized Drugs Manager informed section personnel about this new isomer at their next section meeting on November 18, 2022. On that same day, a supervisor conducting casefile reviews discovered a potential case that could contain this isomer. This prompted the manager to conduct a case file review for all cases reported as alprazolam from January 2021 to November 2022. The focus of this audit was to review items reported as alprazolam with the newly acquired analytical data for 4'-chloro deschloroalprazolam including mass spectral data. From this audit, case 2022-03153 was identified as the only instance where an item was incorrectly identified and misreported.

At the December 1, 2022, meeting, the manager discussed and presented the analytical data for the 4'-chloro-deschloroalprazolam isomer that was obtained from the purchased reference standard. The similarities and differences between alprazolam and this isomer were both discussed. At this meeting the importance of comparing not just similarities but also differences between sources of data (e.g., unknown and standard) was emphasized as a way to mitigate possible cognitive bias.



The report for case 2022-03153 was amended on December 13, 2022, with the following report comment: "This amends Laboratory Report #: 0001 dated 5/24/2022 at 2:31:10 PM to correct the reported results for item 001-01-01 following additional data analysis. The item was originally incorrectly reported as "Contains alprazolam" and is being amended to correct the reported results to "No Controlled Substance Identified". This case is associated with quality report 2022-065, please refer to this quality report for more details." Additionally, in this case there is also an untested evidence item described by the officer as "marijuana" that has not been tested.

The Harris County District Attorney's Office was notified on December 14, 2022, about this issue and that one case had been incorrectly identified and reported. A follow up meeting with the Conviction Integrity Unit was held on December 29, 2022, to confirm that only one case with an incorrect identification had been reported.

Concurrently with the action taken by Seized Drugs, the Toxicology section started a study on November 23, 2022, to help determine whether 4'-chloro-deschloroalprazolam would cause interference with the identification of alprazolam. The study which concluded on December 9, 2022, demonstrated a sufficient difference in the retention times of 4'-chloro-deschloroalprazolam and alprazolam; it demonstrated that 4'-chloro-deschloroalprazolam elutes before the internal standard for alprazolam. Based on this data, the Toxicology Manager performed a review of the 2022 cases where alprazolam was reported as of December 13, 2022 and confirmed there were no misidentifications. Because the Toxicology section uploads casework analysis data to the eDiscovery site and disclosed the way to distinguish the two compounds, the Toxicology case review was not extended beyond 2022. This was in part due to the limited risk of another instance of 4'-chloro-deschloroalprazolam having been present in casework and it not being detected by the analyst in real time since the section demonstrated that the substance elutes before the internal standard and this circumstance would merit troubleshooting in real time.

Moving forward, the Toxicology section will use the data from their interference study to determine the appropriate reporting of a substance as alprazolam or as "not suitable for the HFSC alprazolam analysis due to a possible interference". This data analysis criterion will also be added to the next Toxicology SOP revision.

Section Manager: James Miller

Date: 01/17/23

Division Director: Amy Castillo

Date: 01/17/23

Incidents or Corrective Actions that involve the Biology/DNA section are reviewed by the Technical Leader and CODIS Administrator.

Technical Leader: N/A

Date: N/A

CODIS Administrator: N/A

Date: N/A

Quality Director: Erika Ziemak

Date Closed: 01/17/23



TEXAS FORENSIC
SCIENCE COMMISSION

Justice Through Science

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February 27, 2023

Via e-mail to jmoral@hfsctx.gov

Ms. Jackeline Moral
Houston Forensic Science Center
500 Jefferson St., 13th Fl.
Houston, Texas 77002

Re: Texas Forensic Science Commission (“Commission”) Laboratory Self-disclosure
No. 22.58; Houston Forensic Science Center (Seized Drugs)

Dear Ms. Moral:

At its January 27, 2023 quarterly meeting, the Commission voted to take no further action on the referenced disclosure given the root cause analysis and corrective actions by the laboratory.

Should the laboratory identify any material changes to the information provided in connection with this self-disclosure, please notify the Commission as soon as possible. Thank you and please feel free to contact Commission staff with any questions you may have.

Sincerely,
Leigh M. Tomlin
Leigh M. Tomlin
Associate General Counsel

cc: Peter Stout, via e-mail Pstout@hfsctx.gov