

Tevis, D. S., Flores, S. R., Kenwood, B. M., Bhandari, D., Jacob, P. III, Liu, J., Lorkiewicz, P. K., Conklin, D. J., Hecht, S. S., Goniewicz, M. L., Blount, B. C., & De Jesús, V. R. (2021). Harmonization of acronyms for volatile organic compound metabolites using a standardized naming system. *International Journal of Hygiene and Environmental Health*, 235, 113749. <https://doi.org/10.1016/j.ijheh.2021.113749>

Definitions

- **Volatile Organic Compounds (VOCs):** Chemicals that easily become vapors or gases. They are found in many products, like paints and cleaners.
- **Metabolites:** Substances made when the body breaks down food, chemicals, or drugs.
- **Acronyms:** Shortened forms of words or phrases, like "NASA" for National Aeronautics and Space Administration.

Key Findings

- A new system for naming VOC metabolites has been created to make it easier for scientists to communicate.
- This system helps avoid confusion caused by different names for the same substance.
- The new naming method uses parts of the chemical's name to create clear and unique acronyms.

Introduction

The study addresses the confusion caused by different acronyms for the same volatile organic compound (VOC) metabolites. Scientists and health professionals need a consistent way to name these substances to communicate effectively.

Main Content

Background

VOCs are chemicals that can harm health, causing issues like cancer or brain damage. Scientists study VOCs by looking at their metabolites in urine. Different labs have used various acronyms, making it hard to compare results.

Methods

The researchers reviewed existing literature to find all the acronyms used for VOC metabolites. They created a new system for naming these metabolites using a standard method.

Creating the New Naming System

1. **Base Name:** Start with a two-letter code for the chemical group (e.g., MA for mercapturic acid).
2. **Substituent Abbreviation:** Add a code for the specific part of the chemical (e.g., H for hydroxy).

3. **Position Numbers:** Include numbers to show the position of parts in the chemical structure.
4. **Stereochemistry:** Use E/Z rules to indicate the arrangement of atoms.

Examples

- **4-Hydroxy-2-buten-1-yl mercapturic acid** becomes (E)-4HBEMA.
- **Trichlorovinyl mercapturic acid** becomes 122CVMA.

Conclusion

The new naming system helps scientists and health professionals by providing clear, consistent, and unique names for VOC metabolites. This reduces confusion and improves communication, making it easier to study and understand VOC exposure and its effects on health. The system has been adopted by some labs and published in recent studies.

Word Count: 327

This summary was generated July 2024 by ChatGPT4.o and has not been reviewed for accuracy. This summary should not be relied on to guide health-related behavior and should not be reported in news media as established information. Please refer to the original journal publication listed in the hyperlink on the first page to validate representations made here. This summary will be updated once an expert review is complete.