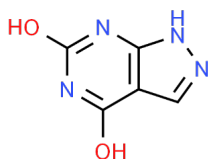




Oxipurinol

Oxipurinol is an active metabolite of allopurinol. Allopurinol is a medication to prevent gout and almost completely metabolizes to oxipurinol. Oxipurinol inhibits the production of uric acid and is slowly excreted by the kidneys.

mass: 152,11
g/mol
CAS:
2465-59-0
C₅H₄N₄O₂



The LANUV measurements meet the following criteria necessary for clear identification:

- 1) match of the exact mass, ± 5 ppm
- 2) match of the isotope pattern, min. 70 %
- 3) match of a reference spectrum
- 4) match of retention time

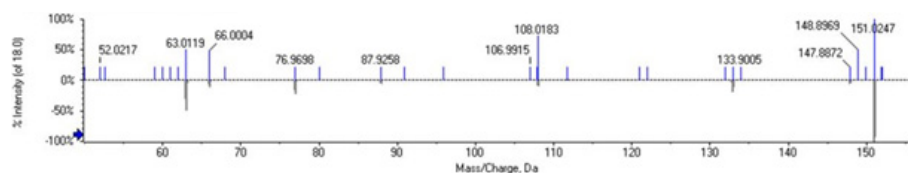


Figure 1: comparison of fragment-ion-spectra, blue: sample Ruhr near Mülheim, gray: reference substance

¹ <https://www.umweltbundesamt.de/themen/wasser/trinkwasser/trinkwasserqualitaet/toxikologie-des-trinkwassers/gesundheitslicher-orientierungswert-gow>

Analysis and occurrence

Oxipurinol can be detected with the existing measuring method in negative mode. It was found in all the investigated rivers (Rhine, Ruhr and Rur) and therefore it belongs to the ubiquitous substances. The general precautionary value of 0.1 $\mu\text{g/L}$ is regularly exceeded. The estimated concentration are between 0.2 up to a lower double-digit range $\mu\text{g/L}$.

Relevance

Due to its persistence and mobility in aquatic systems, oxipurinol is based on current available data classified as potentially relevant to drinking water. The GOW is 0.3 $\mu\text{g/L}$ (TrinkwV)¹.

In 2020 the UBA set an AA-QS (Annual Average - Quality Standard) for freshwater of 14 $\mu\text{g/L}$ and a MAC-QS (Maximum Acceptable Concentration - Quality Standard) for freshwater of 450 $\mu\text{g/L}$. Oxipurinol is found in surface waters in concentrations up to 22 $\mu\text{g/L}$, negative impacts on the aquatic biocenosis cannot be excluded. However, results from chronic tests with fish are missing².

Further procedure:

In order to guarantee an optimized measuring method and therefore reliable measurement results, oxipurinol is transferred to the ECHO measuring program³.

² UBA Texte: 233/2020 UQN für Binnengewässer

https://www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/2020_12_09_texte_233-2020_umweltqualitaetsnormen_binnengewasser.pdf

³ [ECHO-Bericht - Oxipurinol](#)