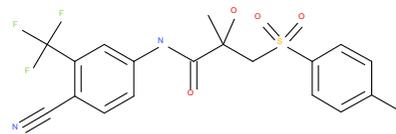




## Bicalutamide

Bicalutamide is an antiandrogen medication used primarily to treat prostate cancer.

mass: 430,373  
g/mol  
CAS:  
90357-06-5  
C<sub>18</sub>H<sub>14</sub>F<sub>4</sub>N<sub>2</sub>O<sub>4</sub>S



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

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

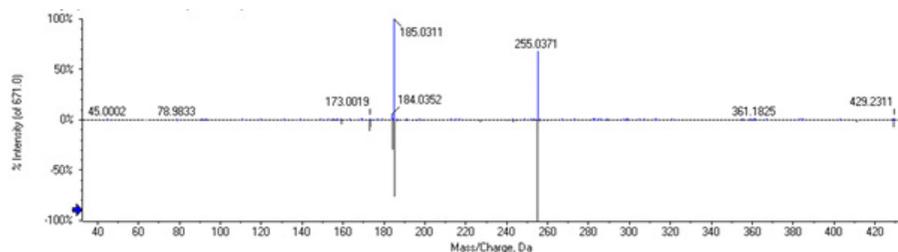


Figure 1: comparison of fragment-ion-spectra, blue: sample Ruhr near Mülheim, gray: reference substance

## Analysis and occurrence

Bicalutamide can be detected with the existing measuring method in negative mode. It was found in all the investigated rivers (Rhine, Ruhr and

<sup>1</sup> <https://www.astrazeneca.com/content/dam/az/our-company/Sustainability/2017/bicalutamide.pdf>

Wupper) and therefore it belongs to the ubiquitous substances. The general precautionary value of 0.1  $\mu\text{g/L}$  is not exceeded.

## Relevance

The substance has a relevant ecotoxicological potential. The PNEC determined by the manufacturer is 1  $\mu\text{g/L}$ , but this was not exceeded in any sample.<sup>1</sup>

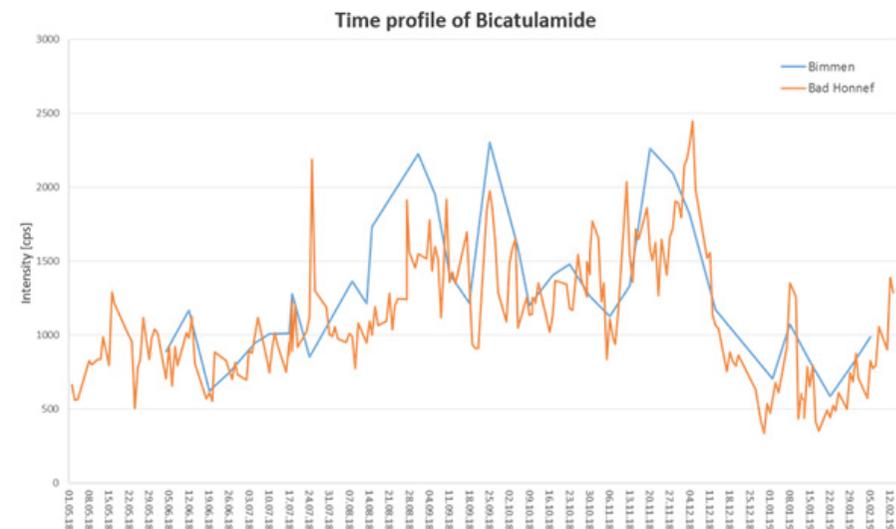


Figure 1: Time profile of Bicalutamide in the river Rhine, orange: Bad Honnef Rhine-km 640, blau: Bimmen Rhine-km 865

## Further procedure:

Bicalutamid will not be included in the regulatory monitoring because the PNEC of 1  $\mu\text{g/L}$  was not exceeded in any sample. By further measurements, no gain in knowledge is expected.