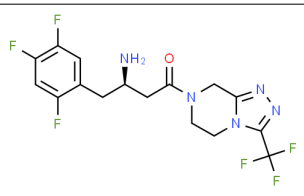




Sitagliptin

Sitagliptin is an orally active drug that is used to improve blood sugar control in the treatment of type 2 diabetes mellitus.

mass: 407,31
g/mol
CAS:
486460-32-6
C₁₆H₁₅F₆N₅O



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

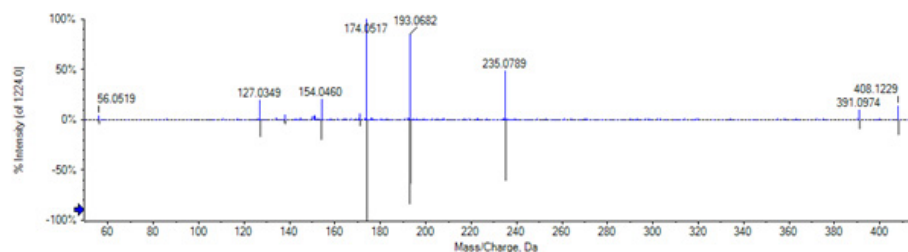


Figure 1: comparison of fragment-ion-spectra, blue: sample Ruhr near Mülheim, gray: reference substance

Analysis and occurrence

Sitagliptin can be detected with the existing measuring method in negative mode. It was found in all the investigated rivers (Rhine, Ruhr, Ems and Lippe) therefore it belongs to the ubiquitous substances. The general precautionary value of 0.1 $\mu\text{g/L}$ is exceeded in some samples. The estimated concentration are around 0.1 $\mu\text{g/L}$.

Relevance

Sitagliptin is slightly soluble in water and tends to adsorb to particles. Based on current available data it is not classified as potentially relevant to drinking water.

No ecotoxicological data are available for sitagliptin. An assessment of possible effects on the biocoenosis is not possible with current data.

Further procedure:

Sitagliptin belongs to the ubiquitous substances and occurs repeatedly in comparable concentrations. By further measurements, no gain in knowledge is expected. Therefore, sitagliptin is not included in the regular monitoring program, even if the precautionary value of 0.1 $\mu\text{g/L}$ is exceeded in some surfacewaters.