

En komparativ studie av ibuprofens enantiomerers påverkan på tillväxten av *Lepidium sativum*

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Abstract

The majority of all the active substances found in pharmaceutical drugs have a chiral structure, which allows two molecules of the same substance to be mirror-images of one another, so-called enantiomers, and thus have specific pharmacodynamics and are not interchangeable in the human body. Ibuprofen, for example, has the two enantiomers ibuprofen and dexibuprofen. This study investigated the possible difference in environmental impact. Solutions with different concentrations of the drugs Ipren (ibuprofen) and Tradil (dexibuprofen) were prepared and were used to water cress (*Lepidium sativum*), which was used as a biological indicator, for 10 days. The results showed that higher drug concentrations led to a lower average length, although not significant until the highest concentration: 0,2 g/dm³. It was concluded that there was no considerable difference between the environmental impact of the two enantiomers of ibuprofen. Nonetheless, multiple sources of errors were identified, e.g. different excipients which can affect the results, and Ipren containing a racemic mixture of the enantiomers. Since the conclusion was based on unreliable data, it should be considered inspiration for further investigation.