Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/pfas-medicines-can-often-be-replaced-alternatives

PFAS in medicines can often be replaced with alternatives

Certain medicines contain per- and polyfluorinated alkyl compounds, known as PFAS, which are causing increasing environmental harm due to their long-lasting effects. A report by the University of Freiburg, commissioned by the German Environment Agency, shows that many PFAS-based active ingredients used in medicines can be replaced by alternative active ingredients. Based on the findings of the report, doctors will in future be able to give preference to prescribing PFAS-free medicines, where this is appropriate from a therapeutic point of view.

A large proportion of the PFAS-containing active pharmaceutical ingredients used in human and veterinary medicine could, in the long term, be replaced by PFAS-free alternatives. This is the conclusion of a report commissioned by the German Environment Agency (UBA) and produced by a research team led by Prof. Dr Michael Müller, a professor at the Institute for Pharmaceutical Sciences at the University of Freiburg. The study shows that, for 87 per cent of the identified human medicines and 65 per cent of the veterinary medicines containing PFAS structures, active ingredients without PFAS properties already exist for the same applications. The study examined 111 active pharmaceutical ingredients for human medicines and 28 for veterinary medicines that are classified as PFAS according to the definition of the Organisation for Economic Co-operation and Development (OECD). Furthermore, the researchers were able to demonstrate that PFAS-free alternatives are already in development for almost all of the remaining human medicines.

“The fact that PFAS-free alternatives already exist for almost all indications is a clear indication that, from a pharmacological point of view, per- or polyfluorination is not strictly necessary,“ emphasises Müller. UBA President Dr Dirk Messneradds, “The study’s findings clearly show that environmental protection and healthcare need not be at odds with one another. The pharmaceutical industry already has enormous leverage in this area, right from the drug development process, to significantly reduce the release of persistent chemicals such as PFAS into our waterways and soil in future.”

Key findings for pharmaceutical research

The report also provides fundamental insights for pharmaceutical research: in the case of the active pharmaceutical ingredients examined, which have a known mechanism of action, the PFAS content is not responsible for the intended medical effect. Per- and polyfluorination is used in pharmacology to improve the stability and distribution of active ingredients within the body.

However, it is precisely these properties that mean, in nature, these substances are difficult or impossible to break down and, once excreted by humans, place a burden on ecosystems. Here, they may accumulate in living organisms and break down into problematic, persistent transformation products such as trifluoroacetic acid (TFA). TFA does not degrade in the environment, is carried by the water cycle and is considered to be toxic to reproduction. According to the expert report, over 80 per cent of the PFAS active ingredients examined have the potential to break down into TFA.

There is no immediate risk to patients from medicines containing PFAS, as these are thoroughly tested for potential risks to human health before they are authorised.

Data for more environmentally friendly alternatives to medicines

Doctors can use these new findings to prioritise prescribing PFAS-free medicines – particularly when starting new patients on treatment – provided this is appropriate from a therapeutic point of view. To facilitate the search for PFAS-free alternatives, the UBA is incorporating the new data into the Environmental Pharmaceutical Index and pharmacists find more environmentally friendly medicines.

For pharmaceutical companies engaged in research, the publication provides a clear impetus to take the environmental impacts of per- and polyfluorinated substances into account at an early stage of drug development.

Implications for EU legislation

The findings are also relevant in the context of European PFAS regulation: the European Chemicals Agency (ECHA) is currently planning the final scientific assessment of a proposal for an EU-wide restriction on PFAS. Based on this assessment, which is due to be completed by the end of 2026, the European Commission is expected to present a corresponding draft legislative proposal in 2027. To date, active pharmaceutical ingredients have been exempt from the planned restriction because they are considered essential. The expert report now suggests that more environmentally friendly alternatives to these active ingredients are available in many areas and that environmental characteristics should be given greater consideration when developing new medicines.

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Further information

- University of Freiburg