Ratio AMPA vs glyphosate and relevance of AMPA for risk assessment

Feedback from HBM4EU

Vol. 1, 2.6.9, Summary of medical data and information, p. 473-474.
Vol. 1, 2.6.10, Toxicological end point for assessment of risk following long-term dietary exposure – ADI (acceptable daily intake), p.487.
Vol. 3, B.6.9.8, Literature data – medical data / treatment / poisoning / exposure, p. 645-707.

Statistical analysis of individual data of very recent human biomonitoring (HBM) studies on internal exposure of glyphosate (GLY) and AMPA supports the existence of GLY-independent sources of AMPA. The relevance and impact of which has been recently discussed by Lemke (2021), referring to Grandcoin (2017) and JMPR (2011), but is largely missing from the **draft Renewal Assessment Report**.

In HBM4EU, GLY and AMPA were determined in children's urine collected recently in Cyprus, Germany, Belgium and Slovenia. The preliminary (unpublished) results combined with recently published studies from Germany (Lemke, 2021), Sweden (Faniband, 2021), Spain (Ruiz, 2021) and Slovenia (Stajnko, 2020) indicate a low but widespread exposure among children with GLY and AMPA concentrations above 0.1 µg/L in up to 54% of the participants. These internal exposures for GLY as well as AMPA should be considered separately in the risk assessment, especially considering the reduction in ADI from 0.5 to 0.1 mg/kg bw/d and AMPA having a similar toxicological profile to GLY (EFSA, 2015). The combined exposure to both GLY and AMPA should be considered as suggested by the JMPR, proposing a group-ADI for GLY+AMPA (JMPR, 2011).

When regressing AMPA (Y-axis) against GLY (X-axis), the slope of the linear fit is less than 1. At lower GLY concentrations, AMPA generally exceeds GLY, vice versa at higher concentrations.

This suggests a GLY-independent source of AMPA in the environment, such as environmental metabolites of amino-polyphosphonates (Grandcoin, 2017).

More details and references in attached file.