

A1	Project Code	IPA-134 Substitution
A2	Project Title	Emerging chemicals at the workplace and in the environment
A3	External Cooperation Partners	Federal Environment Agency (UBA) German Chemical Industry Association e.V. (VCI)
A4	Project Manager(s)	Dr. Daniel Bury Dr. Holger M. Koch

B1 – Aims
<ul style="list-style-type: none"> • Improve our knowledge about chemical substances that enter human bodies by developing human biomonitoring methods for emerging substances at the workplace and in the environment • Identify biomarkers of emerging substances by carrying out controlled metabolism studies in human volunteers • Verify new biomarkers in field studies (workplace, environment) and population samples
B2 – Current Substances of Interest
<p>The substances of interest at IPA can be roughly divided in four groups:</p> <ul style="list-style-type: none"> • Aromatic amines such as aniline and its derivatives • Artificial fragrances such as lysmeral • Substitution products of phthalates such as adipates, DINCH, and terephthalates • Sunscreen ingredients and UV filters such as octocrylene
B3 – Selected Publications
<p>Scherer M, Koch HM, Schütze A, Pluym N, Krnac D, Gilch G, Leibold E, Scherer G (2017) Human metabolism and excretion kinetics of the fragrance lysmeral after a single oral dosage. <i>Int. J. Hyg. Environ. Health</i> <u>220</u>: 123-129.</p> <p>Lessmann F, Schütze A, Weiss T, Langsch A, Otter R, Brüning T, Koch HM (2016) Metabolism and urinary excretion kinetics of di(2-ethylhexyl) terephthalate (DEHTP) in three male volunteers after oral dosage. <i>Arch. Toxicol.</i> <u>90</u>: 1659-1667.</p> <p>Schütze A, Otter R, Modick H, Langsch A, Brüning T, Koch HM (2017) Additional oxidized and alkyl chain breakdown metabolites of the plasticizer DINCH in urine after oral dosage to human volunteers. <i>Arch. Toxicol.</i> <u>91</u>: 179-188.</p> <p>Modick H, Weiss T, Dierkes G, Koslitz S, Käfferlein HU, Brüning T, Koch HM (2016) Human metabolism and excretion kinetics of aniline after a single oral dose. <i>Arch. Toxicol.</i> <u>90</u>: 1325-1333.</p> <p>Schütze A, Lorber M, Gawrych K, Kolossa-Gehring M, Apel P, Brüning T, Koch HM (2015) Development of a multi-compartment pharmacokinetic model to characterize the exposure to Hexamol[®] DINCH[®]. <i>Chemosphere</i> <u>128</u>: 216-224.</p> <p>Leng G, Koch HM, Gries W, Schütze A, Langsch A, Brüning T, Otter R (2014) Urinary metabolite excretion after oral dosage of bis(2-propylheptyl) phthalate (DPHP) to five male volunteers – characterization of suitable biomarkers for human biomonitoring. <i>Toxicol. Lett.</i> <u>231</u>: 282-288.</p> <p>Dierkes G, Weiss T, Modick H, Käfferlein HU, Brüning T, Koch HM (2014) N-Acetyl-4-aminophenol (paracetamol), N-acetyl-2-aminophenol and acetanilide in urine samples from the general population, individuals exposed to aniline and paracetamol users. <i>Int. J. Hyg. Environ. Health</i> <u>217</u>: 592-599.</p>