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Speciation and transfer of radionuclides in the human organism especially taking into account decorporation agents (RADEKOR) –a joint project

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In case radionuclides (RN) enter the food chain and are incorporated by humans, they pose a possible health risk due to their radio- and chemotoxicity. To precisely assess the health risk after oral incorporation of RN with food and beverages and to apply effective decontamination methods, it is mandatory to understand the processes of RN biokinetics on both cellular and molecular scale. Within the joint research project "Speciation and transfer of radionuclides in the human organism especially taking into account decorporation agents (RADEKOR)", quantitative excretion analysis and biokinetic modeling of orally incorporated RN are performed. Additionally, these macroscopic investigations are combined with molecular speciation studies of RN in artificial fluids of the alimentary tract of humans and cytotoxicity studies with respective human and rat cell lines both in the absence and presence of decorporation agents. Aim of the project is to expand the knowledge of processes underlying RN interactions within the human alimentary tract on a cellular and molecular scale to establish a precise biokinetic model as well as to contribute to the development and improvement of nuclide specific decontamination methods.
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