

REPORT ON THE INTERDISCIPLINARY RADIATION RESEARCH ON RADON - INTERRAD

(22nd – 26th April 2024 in Munich, German)

The European Training Course “Interdisciplinary Radiation Research On Radon -Interrad” was organized by the Federal Office for Radiation Protection (Bundesamt für Strahlenschutz, BfS) as part of the RadoNorm project. The course was from April 15th to 26th and was composed of lectures, carried out in an online format during the first week, and practical trainings in the BfS laboratories in Munich from April 22nd to 26th.



It was an interdisciplinary course on radioactivity research, focused on radon, aimed at expand the knowlege of the different techniques used in the fields of radiation physics, radiation epidemiology and radiation biology.

During the training in the BfS laboratories there was practical demonstrations of the different methods for tracing radioactivity in human body, foods and environment, in particular on gamma spectrometry.

We had three days of laboratory sessions of radiation biology. The first day was focused on micronuclei assay, aimed to evaluate the dose from the presence of micronuclei (which represent an anomaly in cellular reproduction).

We prepared the slides for this assay using irradiated blood samples, and then we analysed them using the IKAROS Metasystems software. During the second day we did the same procedure, but for the Dicentric assay, and we did some exercise with IKAROS Metasystems software to see the differences between the different methods of analyses (manually, semi-automatically and fully automatically).



The last radiation biology laboratory session was focused on Radiation induced foci assay (γ -H2Ax). The slides have been prepared by separating lymphocytes from the blood samples irradiated with a known dose, like on the other assays; then the proteins γ -H2Ax in the lymphocytes (form in response to radiation-induced DNA doublestrand breaks) have been marked with fluorecent antibodies. In this way it was possible to analyse the slides by the immunofluorescence microscopy and score the γ -H2Ax foci with IKAROS Metasystems software., so we could see the relationship between the number of foci and the dose.

The last day we had practical demonstrations of some intruments and techniques to tracing radon, thoron and their progeny.



This course was very interesting and well organize and it was a great opportunity to broadening my vision of the topic and deepening my knowledge. Besides that, I could extend my contacts, meeting others young researchers of the field. I would definitely recommend the course to every radiation protection young researcher.

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