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Tuning of the Radium biodistribution by dietary supplements in a CD1 mice model.

Although ²²³RaCl₂ has been approved for the treatment of bone metastases originating from mCRPC (EMA, FDA and others), further data on ²²³Ra biodistribution and possible metabolism tuning are needed particularly after the discovery of increased risk of death and fractures due to the interactions of ²²³Ra with abiraterone, prednisone/prednisolone treatment.
Thus we report here the results of biodistribution study with ²²³RaCl₂ applied intravenously to a healthy female CD1 mice fed with various dietary supplements - vitamin D and CaCl₂ or with co-treatment with zoledronic acid. Ex vivo biodistributions were determined in major organs in 24 and 96 h. p.i.
Our results indicate that the vitamin D and CaCl₂ supplements and co-treatment with zoledronic acid have direct impact on Radium biodistribution and elimination kinetics.
We speculate that under optimized conditions the treatment of bone metastases may become more efficient and safer compared to application of ²²³RaCl₂ only.

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