

**PROPOSED
EURAMET PROJECT**

1. Ref. No.: (please leave blank)	2. Subject Field: Ionising Radiation	
3. Type of collaboration: comparison of measurement standards		
4A. Partners: LNE-LNHB,	4B. CEC funded? No	
5. Participating countries: France,		
6. Title: Standardization, decay data measurements and evaluation of ^{64}Cu		
7. Description: Copper 64 ($T_{1/2} = 12.7$ h) is a radionuclide decaying through β^+ emission or electron capture to nickel 64, and through β^- to zinc 64. This radionuclide is to be used as a radiopharmaceutical for PET imaging. One of its interests lies on its possible association with copper 67, a β^- emitting nuclide which can be used for radio-immunotherapy applications. These two isotopes can then be linked to the same bio-marker, ensuring a perfect superposition of the PET image using copper 64 with the distribution of the drug with copper 67 in the patient body and in the tumor to be treated. At present, there is no international traceability established for that nuclide through key comparisons. Some decay data like the β^+/β^- ratio, the absolute intensities of X, annihilation and gamma photons require some new determinations. The aim of that project is then - to create copper 64 national activity standards able to be transferred to practitioners of the medical field through secondary standards, - to establish their international traceability and to bring significant input in the BIPM KCDB, -- to determine with high accuracy decay data such as branching ratios, photon emission intensities and half-life, - to issue an updated evaluated decay scheme, based on former published results and on those coming from that project.		
8. Additional remarks: Due to the relatively short half life of that radionuclide, the comparison of activity standards should be made with different solutions through participations to the SIR in coordination with the BIPM. The interested laboratories should indicate if they will have the radioactive product available. The time schedule of the exercise will depend on that availability.		
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10. Proposer's signature:	11. Date: September 2008	12. Proposed starting date: January 2009