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Public Consultation on the ICH Guidelines Q2 and Q14 on Analytical procedures
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The European Association of Nuclear Medicine welcomes the review of the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) draft guidelines Q2(R2) on Validation of analytical procedures and Q14 on Analytical procedure development, recently released for public consultation.
These guidelines represent a general and commonly accepted basis for the development and validation of analytical methods for most of drug substances and products.
However, in the ICH guideline Q14 it is also stated that "Approaches other than those set forth in this guideline may be applicable and acceptable with appropriate science-based justification. The applicant is responsible for designing the validation studies and protocol most suitable for their product", thus recognizing that the suggested analytical methodology may not be fully applicable in special cases. Although they are not specifically mentioned in ICH texts, radiopharmaceuticals are certainly a special case and should therefore be excluded of the scope of the ICH analytical procedures guidelines.
Indeed, these guidance documents (ICH Q2 and ICH Q14) do not fully address all the specific tests required for the analysis of radiopharmaceuticals.

Radiopharmaceutical preparations or radiopharmaceuticals are medicinal products which, when ready for use, contain one or more radionuclides included for a medical purpose. The radioactive compounds in radiopharmaceuticals may contain simple salts, metal complexes, small organic molecules or large molecules as the active pharmaceutical ingredient. As for any other pharmaceutical, their quality (i.e. identity, strength, and purity) needs to be controlled before administration to patients, to ensure that their characteristics are suitable for the intended purpose. However, for quality control of radiopharmaceuticals specific aspects which differ from conventional pharmaceuticals must be taken into account:

- The strength of a radiopharmaceutical is defined by its radioactivity content, or radioactivity concentration, and it follows the decay law; thus, the strength of a radiopharmaceutical decreases with time.
- Radioactive standards for the drug substance or radiochemical impurities are not available, the radioactive drug substance itself cannot be isolated.
- Whilst analytical techniques used to determine the content of non-radioactive components of radiopharmaceutical preparations are generally the same as those used for conventional pharmaceuticals, radioactivity determination requires specific techniques, which make use of dedicated instrumentation capable of specifically detecting, discriminating and quantifying the radioactivity in the sample.

As a special class of medical products, radiopharmaceuticals require their own guidelines. In this respect, the EANM, in cooperation with EDQM, has recently developed a guideline on the validation of analytical methods for radiopharmaceuticals. This includes recommended approaches to validate analytical methods for radiopharmaceuticals.
As such, the Nuclear Medicine community does not see the need for radiopharmaceuticals to be covered by these Q2 and Q14 analytical guidelines, and should be explicitly exempted, but would rather call for a recognition by the ICH of the EANM guidelines on this matter.

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For reference:
Gillings, N., Todde, S., Behe, M. et al. EANM guideline on the validation of analytical methods for radiopharmaceuticals. EJNMMI radiopharm. chem. 5, 7 (2020). https://doi.org/10.1186/s41181-019-0086-z
European Directorate for the Quality of Medicines & HealthCare: Revised guidance for elaborating monographs on radiopharmaceutical preparations: new section on validation of methods : https://www.edqm.eu/en/-/revised-guidance-for-elaborating-monographs-on-radiopharmaceutical-preparations-new-section-on-validation-of-methods