

ISO/TS 7833:2024-01 (E)

Nanotechnologies - Extraction method of nanomaterials from lung tissue by proteinase K digestion

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Symbols and abbreviated terms.....	2
5 Materials - PK digestion buffer and optimal concentration for lung tissue digestion.....	2
6 Technical equipment.....	2
6.1 Vessels.....	2
6.2 Heat block or water bath.....	3
6.3 Drying oven.....	3
6.4 Micro ball mill.....	3
6.5 Microcentrifuge or ultracentrifuge.....	3
6.6 Bath sonicator.....	3
6.7 Pipettes.....	3
7 Procedures.....	3
7.1 Preparation of lung tissue sample for digestion.....	3
7.1.1 Sampling and drying for lung tissue samples.....	3
7.1.2 Homogenisation of dried tissue slices.....	3
7.2 Tissue digestion by PK.....	3
7.3 Collection of nanomaterials and preparation for instrumental analysis.....	4
8 Methodological considerations for the digestion by PK.....	4
8.1 Separative collection of nanomaterials from their ionic counterparts.....	4
8.2 Types of nanomaterials applicable to this method.....	4
8.3 The impact of blood in organs on this method.....	4
Annex A (informative) Recovery efficiency of nanomaterials from the spiking experiment and identification of nanomaterials with TEM after PK digestion.....	5
Annex B (informative) Evaluation of the optimal PK digestion buffer for lung tissue digestion.....	8
Annex C (informative) Evaluation of the optimal concentration of PK for tissue digestion.....	9
Annex D (informative) Efficacy of tissue digestion with/without drying and powderisation.....	10
Annex E (informative) Comparison of tissue digestion with/without perfusion.....	11
Bibliography.....	13