

ISO/TS 23459:2021 (E)

Nanotechnologies — Assessment of protein secondary structure during an interaction with nanomaterials using ultraviolet circular dichroism

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Abbreviated terms
5	Nanomaterial protein interactions
6	Sample preparation
6.1	General
6.2	Desired properties of the UV-CD quartz cell
6.3	Preparation of protein solution
6.4	Instrumental setting condition
6.5	Recording UV-CD spectra procedure
6.5.1	General
6.5.2	Buffer
6.5.3	Protein sample
6.5.4	Stability of NP suspension in the protein solution
6.6	Preparation of protein-NPs conjugated suspension
6.7	UV-CD spectra measurement
6.8	Calculation of molar ellipticity
6.9	Data analysis
7	Test report
Annex A	(informative) Typical UV-CD spectra of proteins
Annex B	(informative) Literature survey on structural changes of NOAA and proteins
Annex C	(informative) Description of buffers that can be used for protein solubility
C.1	Buffer
C.2	Cleaning agent
C.3	Absorbance of NP in CD experiments
C.4	Absorbance of buffers in far-UV region
C.5	Control for sample preparation and recording good quality spectra
Annex D	(informative) Unit conversions in CD measurements
Annex E	(informative) Calculating the concentration range of the sample
Annex F	(informative) Methods for estimation of secondary structures of protein
Annex G	(informative) Typical data of UV-CD used for estimation of secondary structures of protein