

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 |