

Analytical services at CycloLab Ltd.

CycloLab has been engaged with cyclodextrins for over 40 years and during this time we have collected a lot of experience in cyclodextrin analysis. The CycloLab analytical testing laboratories offer a diverse range of analytical techniques and hundreds of different tests. CycloLab helps clients solve quality issues, support research projects, trouble-shoot, mitigate risk and much more. The laboratories test a wide range of chemicals and materials, working with clients on a global basis.

Our analytical portfolio

1. Liquid Chromatography:

Determination of impurities, purity, identification, assay in cyclodextrin samples

Qualitative and quantitative determination of material (cyclodextrin or API) in formulations

Forced degradation (stress) studies

Analysis of Sugammadex samples

2. Gas Chromatography:

Determination of volatile organic components, residual solvents, volatile active ingredient content in cyclodextrin complexes

3. Capillary electrophoresis:

Determination of interaction strength between API and cyclodextrins, residual ionic compounds, average degree of substitutions of charged cyclodextrins, chiral separations

4. Spectroscopic analysis (NMR – 1D and 2D, infrared spectroscopy, mass spectroscopy – LC-MS, MALDI, ESI, fluorescence spectroscopy):

Structure identification, determination of impurities, determination of interaction strength between API and cyclodextrins, assessment of stoichiometry and complex structure

5. ICH stability testing

6. Elemental impurities by ICP-MS

7. Microbial testing:

TAMC, TYMC, bacterial endotoxins, E. coli, Salmonella, Pseudomonas A., Staphylococcus A, etc.

8. Colloid characterization:

Dynamic light scattering, zeta potential, particle size distribution analysis (by photon correlation spectroscopy / dynamic light scattering)

9. Polymer characterization:

Average molecular weight, static light scattering, mean globule diameter

10. Isothermal titration calorimetry: determination of interaction strength and complex stoichiometry

11. Powder analysis:

Differential scanning calorimetry, X-Ray Powder Diffraction, Scanning electron microscopy, Transmission electron microscopy, Laser diffraction analysis, Raman mapping, Scanning Electronmicroscopy with X-ray Microanalysis, tapped density, bulk density

12. Bioequivalence studies:

Membrane permeation, protein binding, dissolution and dilution studies for formulation samples

13. Surface tension measurement, viscosity determination, refractive index for solution

14. Circular dichroism

15. Classical analytical measurements:

pH, osmolality, wet chemistry, conductometry, UV/VIS

16. Water content determination:

Karl-Fischer titration and loss on drying,

17. In silico analysis:

Molecular modeling studies to assess binding strength and complex structure