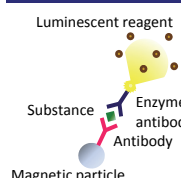


Analytical Technics for benchmark of *in vitro* diagnostics

Recently, initial cancer diagnosis and pre-symptomatic diagnosis are regarded as important for extension of healthy life expectancy. Our analysis technics is available for several points such as inorganic, organic analysis and interaction analysis of antigen-antibody reaction for *in vitro* diagnostics.

Variation of *in vitro* diagnostics



- Immune serum inspection
- Biochemical inspection
- Blood test
- Genetic screening
- Bacteria test
- Pathological examination

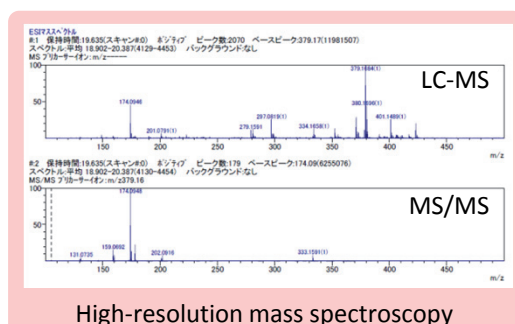
Target biological substances

- Amino acid, Peptide, Protein, Sugar, Lipid, Nucleic acid, Electrolyte, Inorganic matter, Moisture etc.
- Drug and it's Metabolite
- Antigen, Antibody
- Virus, Microbe, Protozoa and it's egg
- pH, Acid degree
- Cell, Tissue and it's component

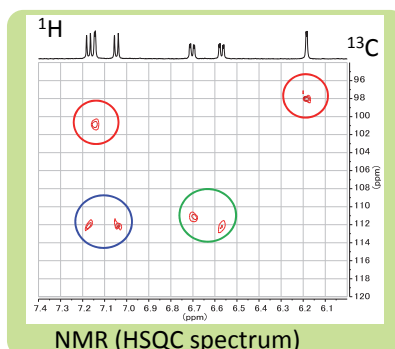
Cause analysis of degradation for *in vitro* diagnostics

In vitro diagnostics are made of several materials according to the target biological substance and basis of biochemical reaction. The failure and impurity cause **degradation of performance of *in vitro* diagnostics**. In the case of degradation, it must be analyzed for cause analysis.

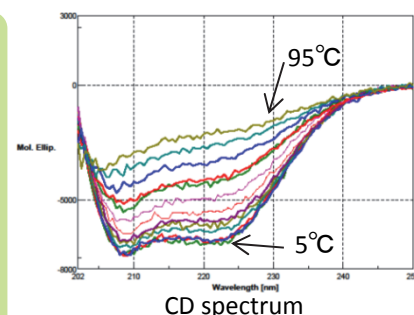
Scope	Target	Analysis method
Impurities / Contaminations	Inorganic material (element, salt)	ICP-OES, ICP-MS, XRF
	Inorganic ion, amine, acid	IC, IC-MS, CE
	Organic material (solvent, surfactant, dye, polymer, etc.)	GC, GC/MS, HPLC, LC/MS/MS, LC-NMR IR, NMR, MALDI-MS
	Foreign substance	FT-IR, SEM-XMA, Raman
	Amino acid, Peptide, Protein	HPLC, LC/MS/MS, MALDI-MS, CD, Ultracentrifuge analysis, CE, SDS-PAGE, Amino acid analysis /sequence
Material failure (decomposition, alternation, aggregation, etc.)	Sugar	Sugar composition analysis, HPLC, LC/MS/MS, MALDI-MS, GC, GC/MS
	Checking, Deformation	Morphological observation, DIC, Raman, XRD, etc.
	Conjugation of surface composition / property	XPS, TOF-SIMS, AFM, Wettability, etc.
	Odor	P&T-GC/MS etc.
	Alternation	UV-Vis, ESR, HPLC, LC/MS/MS
Failure of reaction tube or sensor	Elution, Extractable	LC, LC/MS/MS, ICP-MS etc.
	Degradation of interaction ability	Antigen, Antibody, Low molecular weight compound
		SPR, ITC, STD-NMR, Submerged AFM, Epitope analysis



High-resolution mass spectroscopy



NMR (HSQC spectrum)



CD spectrum
(Alternation of protein by temperature)

We respond quickly to sudden performance abnormalities. Please INQUIRE to us!