

Instrumentation

NAT uses state-of-the-art instrumentation in the areas of chromatography, spectroscopy, microscopy, drug and polymer testing.

Separation

- Analytical (Agilent 1100, 1200) and Preparative (Varian Dynamax) High Performance Liquid Chromatography (HPLC)
- Varian Load&Lock columns with packing station
- Separation Detection Systems
 - Spectrophotometric (UV-Vis)
 - Fluorescence
 - Evaporative Light Scattering (ELSD)
 - Electrospray Ionization-Ion Trap Mass Spectrometry (ESI-IT-MS)
 - Atmospheric Pressure Chemical Ionization-Ion Trap Mass Spectrometry (APCI-IT-MS)

Mass-Spectroscopy

- Quadrupole/linear ion trap (MDS SCIEX 4000 QTRAP)

Molecular Spectroscopy

- Ultraviolet-Visible Spectrophotometry (UV-Vis)
- Fourier Transform Infrared Spectroscopy, FT-IR (Nicolet Spectrum 100)

Atomic Spectroscopy

- Flame Atomic Absorption (FAA)

Microscopy and Surface Analysis

- Optical Microscopy
- Heated Table Polarized Light Optical Microscopy

Physical and Thermal Testing

- Thermogravimetric Analysis, TGA (TA Instrument Q500TGA)
- Differential Scanning Calorimetry, DSC (TA Instrument Q1000)
- Particle Size Analysis (Malvern, Mastersizer)

Wet Chemical Techniques and Other Equipment

- Karl Fischer Volumetric Titration
- pH
- Ion Selective Electrodes (ISE)
- Soxhlet Extraction
- Accelerated Solvent Extraction
- Brookfield Viscometers
- Weathering Chambers (Temperature, Humidity Control)

Drug Formulation

- Tablet Press
- Carver Press (Heated Plates)
- Film Casting Table
- Homogenizer (Polytron 10/35)
- Osmomolality
- Tablet Hardness
- Tablet Friability
- Tap Density
- Flow Density
- Dissolution (Distek 2100)
- Lyophilization (VirTis Genesis)
- Microfluidizer (Microfluidics, M-110S)
- Lipex Extruder (100 mL)