

TLC scanner

bSCAN- a compact and advanced TLC Radio Chromatograph Instrument

Automated scanning, digital multichannel acquisition, and configurable scintillation detector options in one laboratory instrument.



OVERVIEW

The bSCAN-V3 is a fully programmable radio thin-layer chromatography (radio-TLC) scanner for the analysis of radiolabeled compounds. It is designed for radiochemical purity measurements in nuclear medicine, radiopharmacy, radiolabeling and radiopharmaceutical production and research laboratories.

The integrated digital multichannel analyzer (MCA) supports chromatogram acquisition through multichannel scaling (MCS) and gamma-ray energy spectrum acquisition through pulse-height analysis (PHA), using an appropriate spectroscopic detector. Gamma spectroscopy supports radionuclide identification and radionuclidic purity assessment where the analytical method is validated.

KEY FEATURES

- Automatic scanning with adjustable speed from 0.1 to 2 cm/s
- Standard lead-shielded NaI(Tl) detector; alternative BGO and plastic detector configurations
- Interchangeable 1 mm and 3 mm collimator apertures
- Digital MCA with PHA and MCS acquisition modes
- Software-controlled positioning, calibration, data storage and report generation
- USB 2.0 interface; maximum TLC strip area 50 × 220 mm

DETECTOR CONFIGURATIONS

NaI(Tl) — standard: Gamma- and X-ray-sensitive detector with energy spectroscopy capability. Suitable for radio-TLC measurements of gamma-emitting radionuclides such as ^{99m}Tc , ^{123}I , ^{125}I , ^{131}I , ^{111}In and ^{177}Lu , as well as positron emitters including ^{18}F , ^{68}Ga and ^{64}Cu through detection of annihilation photons.

BGO — alternative: High-density scintillation detector for photon-based radio-TLC measurements, particularly SPECT radionuclides such as ^{99m}Tc , ^{123}I , ^{111}In , ^{131}I and ^{177}Lu . Applications involving positron emitters such as ^{18}F and ^{68}Ga require confirmation of the specific detector configuration.

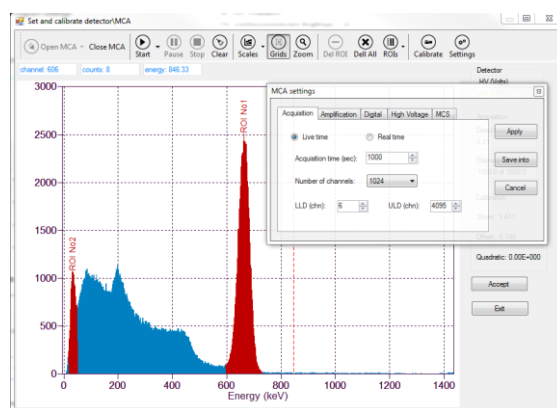
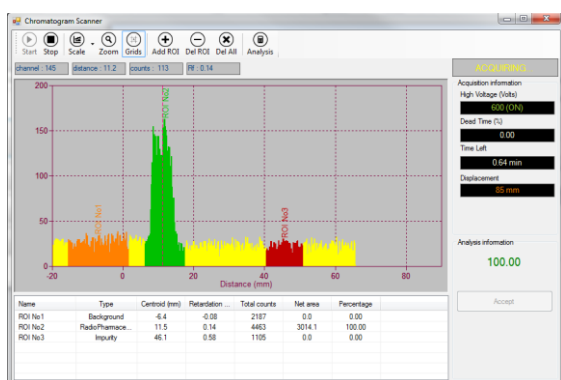
Plastic scintillator — alternative: Detector for direct charged-particle counting in radio-TLC applications involving positron emitters such as ^{18}F and ^{68}Ga , and beta emitters such as ^{90}Y . Additional potential applications include ^{64}Cu , ^{177}Lu and ^{131}I , depending on beta-particle energy and detector configuration.

APPLICATIONS

Radiochemical purity assessment; routine radiopharmaceutical quality control; in-process radiolabeling reaction analysis; PET and SPECT radiopharmaceutical research and development; and gamma-ray energy spectrum analysis for radionuclide identification. Suitable for applications involving gamma-, positron-, and beta-emitting radionuclides, depending on detector configuration and analytical method validation.

SOFTWARE AND MEASUREMENT

Scanner movement and calibration; radio-TLC chromatogram acquisition; gamma-ray spectrum capture and analysis; configurable energy windows; automatic file storage; reanalysis of recorded spectra; and customizable HTML-compatible reports. Radionuclide identification requires an appropriate photon-spectroscopy detector.



STANDARD SUPPLY AND OPTIONS

Scanner; standard NaI(Tl) detector; two collimators; two plastic TLC strip holders; AC/DC adapter and EU cable; 2 m USB cable; bSCAN software and electronic user manual.

bSCAN-V3 | TECHNICAL SPECIFICATIONS

Parameter	Specification
Model	bSCAN-V3
Dimensions (W × H × D)	38 × 35 × 25 cm
Weight	16.5 kg
Standard detector	NaI(Tl) scintillator with photomultiplier
Typical crystal size	1 × 1 inch (25.4 × 25.4 mm)
Typical energy resolution	7–8% at 662 keV [NaI(Tl)]
Detector shielding	Minimum 10 mm lead (Pb)
Collimator apertures	1 mm and 3 mm
Scan area	Up to 50 × 220 mm
Automatic/manual scan speed	0.1–2 cm/s / approx. 0.5 cm/s
Acquisition modes	PHA and MCS
MCA channels	Up to 4096 [manufacturer confirmation pending]
Dwell time	0.1 s to 24 h
Data interface	USB 2.0 (USB-B instrument connector)
Power supply	External AC/DC adapter [input range to confirm]
Operating system	Microsoft Windows [supported versions to confirm]

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