

Nuclear Staining

Bright & specific stains for microscopy, flow cytometry, and live-cell imaging

Discover *Biotium's* nuclear staining portfolio. All reagents employ rapid, no-wash protocols and are optimized for microscopy, flow cytometry, and super-resolution applications—giving you high-contrast nuclear images in minutes.

NucSpot® Nuclear Stains

Bright, no-wash counterstains for fixed cells & dead-cell discrimination

- **Minimal background:** virtually non-fluorescent until bound to DNA
- **No RNase treatment** needed
- **8 colors available**
- **Quick protocol:** 10 min incubation, no RNase or wash required
- **Applications:** For microscopy, flow cytometry, or cell cycle profiling

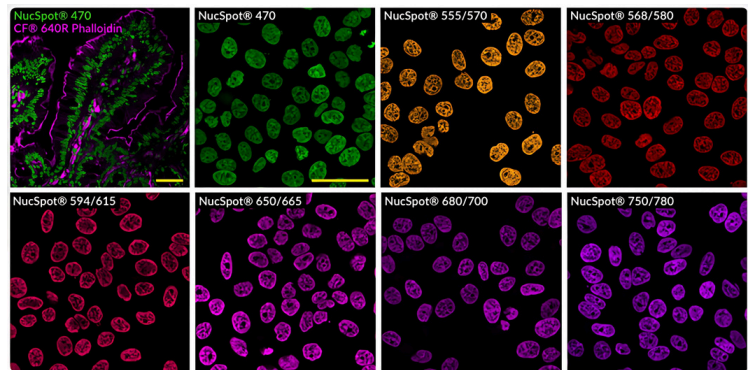


Figure 1. Intestine section (top left) stained with CF[®]640R Phalloidin (magenta) and NucSpot[®] 470 (green). Other panels show PFA-fixed, Triton[®] X-100-permeabilized HeLa cells stained with NucSpot[®] dyes (1×, except 750/780 at 5× for 640 nm), no-wash confocal imaging. Scale bars: 50 μm.

NucSpot® Live Nuclear Stains

Low-toxicity, no-wash dyes for real-time imaging

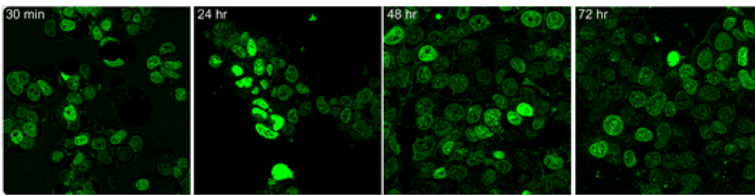


Figure 2. MCF-7 cells continuously stained with NucSpot[®] Live 488 for 0–72 h; no toxicity observed, with slight extranuclear staining at later time points.

- **Cell-permeant:** stain live nuclei without fixation
- **Multi-day imaging:** minimal phototoxicity (up to 72 hours)
- **Super-resolution ready:** Live 650 compatible with SIM, STED, STORM
- Suitable for **long-term live cell imaging experiments**

Live-or-Dye NucFix™ Red

Covalent, no-wash dead-cell nuclear stain for fixation-compatible detection.

- **Covalent dead-cell stain:** fixes with conventional protocols
- Can be detected in **flow cytometry or microscopy**

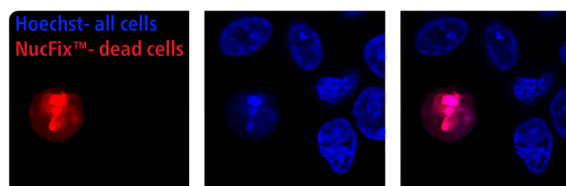


Figure 6. HeLa cells treated with 5% ethanol (10 min), stained with Live-or-Dye NucFix[™] Red (red) and Hoechst (blue); only dead cells exhibit bright red nuclear staining (Zeiss LSM 700, Cy[®]3 & DAPI channels).

RedDot™ Far-Red Nuclear Dyes

RedDot™1

- Cell-permeant far-red dye, similar to Draq5™
- Suitable for short-term imaging of nuclei in live cells
- Cell cycle analysis by flow cytometry ✓

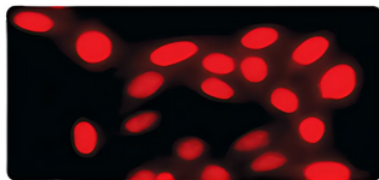


Figure 3. Live HeLa cells stained with RedDot™1 for 5 minutes at 37°C.

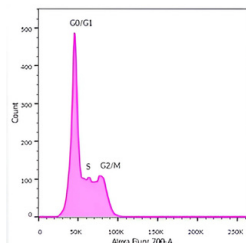


Figure 4. Live Jurkat cells stained with 1× RedDot™1 (30 min) for cell-cycle analysis by BD LSRII flow cytometry (633 nm excitation, 710/50 BP).

RedDot™2

- Cell-impermeant far-red dye, similar to Draq7™
- For fixed cells or tissues, or selective dead-cell staining
- Superior nuclear specificity without RNase

RedDot™2 vs. Draq7™

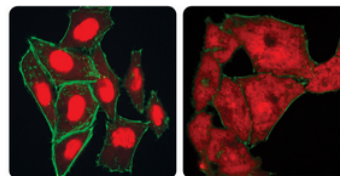


Figure 5. Fixed, permeabilized HeLa cells stained with RedDot™2 (left) or Draq7™ (right); RedDot™2 is nuclear-specific, while Draq7™ also labels cytoplasm without blocking.

Choose Your Nuclear Staining Solutions

Product	Type	Color (Ex/Em)	Permeability	Key Features
NucSpot® Nuclear Stains	Fixed-cell counterstain	461–780 nm (8 colors)	Impermeant until fixation; stains dead cells in live cultures	Bright & specific; no-wash; no RNase; 10 min protocol
NucSpot® Live Nuclear Stains	Live-cell nuclear stain	503/518 nm; 655/681 nm	Cell-permeant	Low toxicity; no-wash; multi-day imaging; SIM/STED/STORM compatible
RedDot™ 1	Far-red live-cell stain	608/679 nm	Cell-permeant	Rapid live-cell staining; flow cytometry compatible
RedDot™ 2	Far-red dead-cell stain	618/698 nm	Cell-impermeant	Superior nuclear specificity; no blocking or RNase needed
Live-or-Dye NucFix™ Red	Dead-cell nuclear stain kit	Red (Cy®3 channel)	Cell-impermeant	Covalent labeling; fixation-compatible; no-wash

Contact us today to explore our **full portfolio** of nuclear staining reagents!



More Options Available

- Cyanine-based dead-cell stains (YO-PRO, TO-PRO, PO-PRO series)
- Classic dyes: Hoechst, DAPI, PI formats
- EverBrite™ mounting media with DAPI & TrueBlack®

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