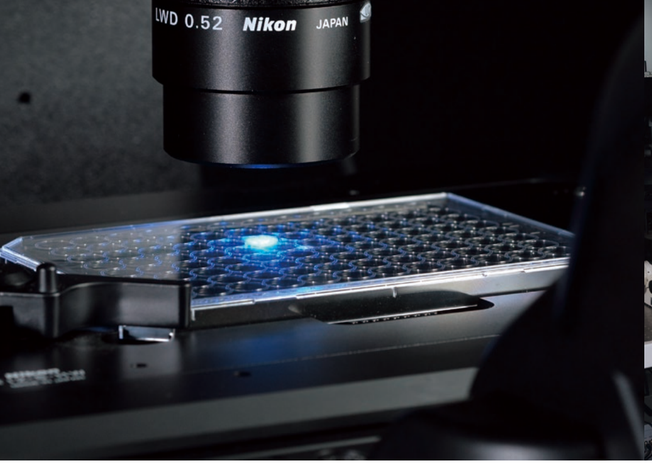
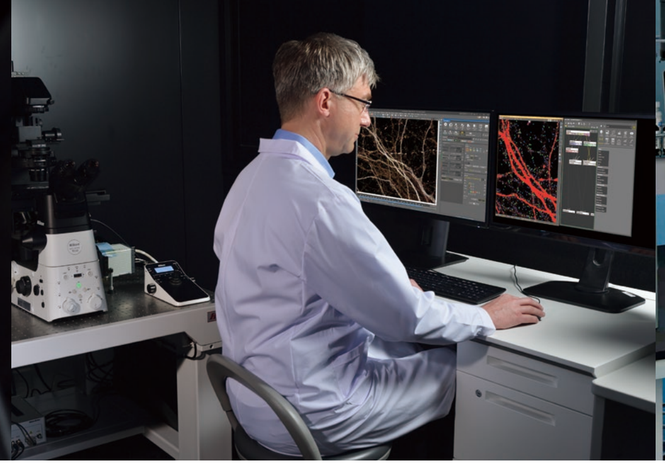
Nikon
Imaging Software
NIS-Elements





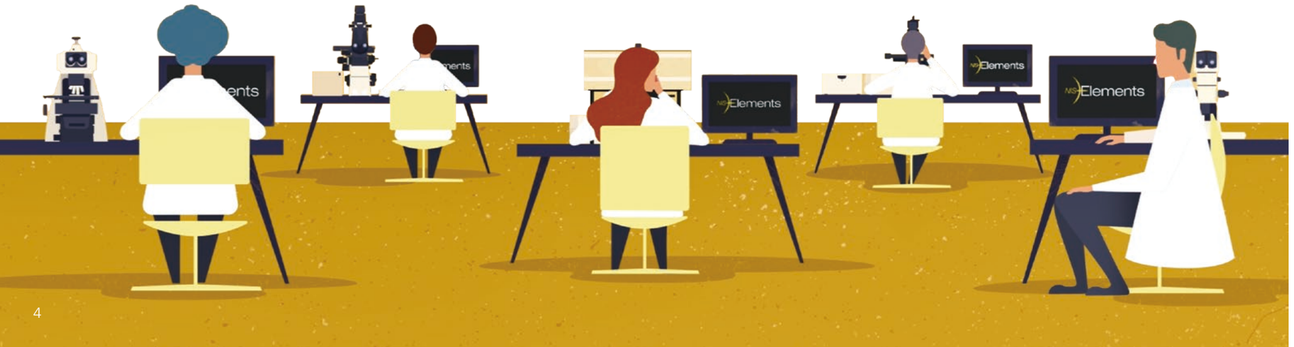
NIS-Elements is the total imaging solution for your research

Nikon's universal software platform, NIS-Elements, combines powerful image acquisition, analysis, visualization and data sharing tools. With fully customizable user interfaces and software modules, NIS-Elements can serve as a simple interface for photo-documentation and also power complex, conditional workflows with automated imaging and analysis routines.
In addition, utilizing deep learning, a subfield of AI technology, NIS-Elements can perform high-speed image processing and analysis according to the user's specific needs.

Hardware Triggering	**Deep Learning**	**Ratio Imaging**	NIS Elements
FRET	**FRAP**	**Cell Count**	
Large Image Stitching	**Volume Analysis**	**Report Generation**	**High Content Analysis**
Tracking	**Deconvolution**	**TIRF**	**Segmentation**
Colocalization	**Photostimulation**	**Ca^{2+} Imaging**	**Experiment Customization**

One software platform for a variety of microscope systems

Nikon is committed to a single software platform that is compatible with a diverse array of microscope systems. NIS-Elements provides the same interface, control, workflow, and terminology whether it's used for widefield, confocal, or super resolution imaging. With one platform to learn, users can easily switch between microscope systems when their applications require different imaging modalities. Imaging results from different Nikon systems can also be easily combined and analyzed to expand your research direction.



Evolves with your research

The software is on the move, always transforming with the demands of research. With NIS-Elements, you can continue to grow your system over time (e.g. upgrade the detector, add additional detectors, change light sources, add a confocal, add high-throughput functionality, etc.).

Nikon's flagship NIS-Elements package

Optimized for advanced research applications, Nikon's flagship software package features fully automated image acquisition, advanced device control and powerful analysis and visualization tools.

Confocal imaging package

Dedicated interface for Nikon's confocal and multiphoton systems, providing easy instrument setup and streamlined operation. Incorporates many of the features of NIS-Elements AR for advanced acquisition, image processing, analysis, visualization and data sharing capability.

Standard research application package

Developed for standard research applications such as analysis and photodocumentation of fluorescent imaging, NIS-Elements BR features up to four-dimensional acquisition and advanced device control capabilities.

Free software package

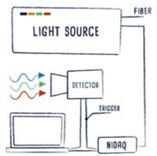
A free software package with basic image acquisition and measurement functions. It also supports Wi-Fi connection with compatible cameras. It can be downloaded from the Nikon website.

Photodocumentation package

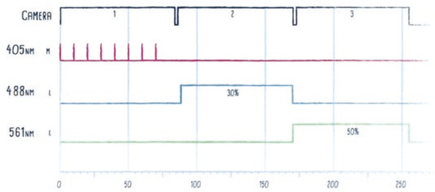
Software package for photo-documentation, including basic measuring and reporting tools. A documentation viewer capable of routine "point-and-shoot" image acquisition, manual measurements, and optional automated object counting.

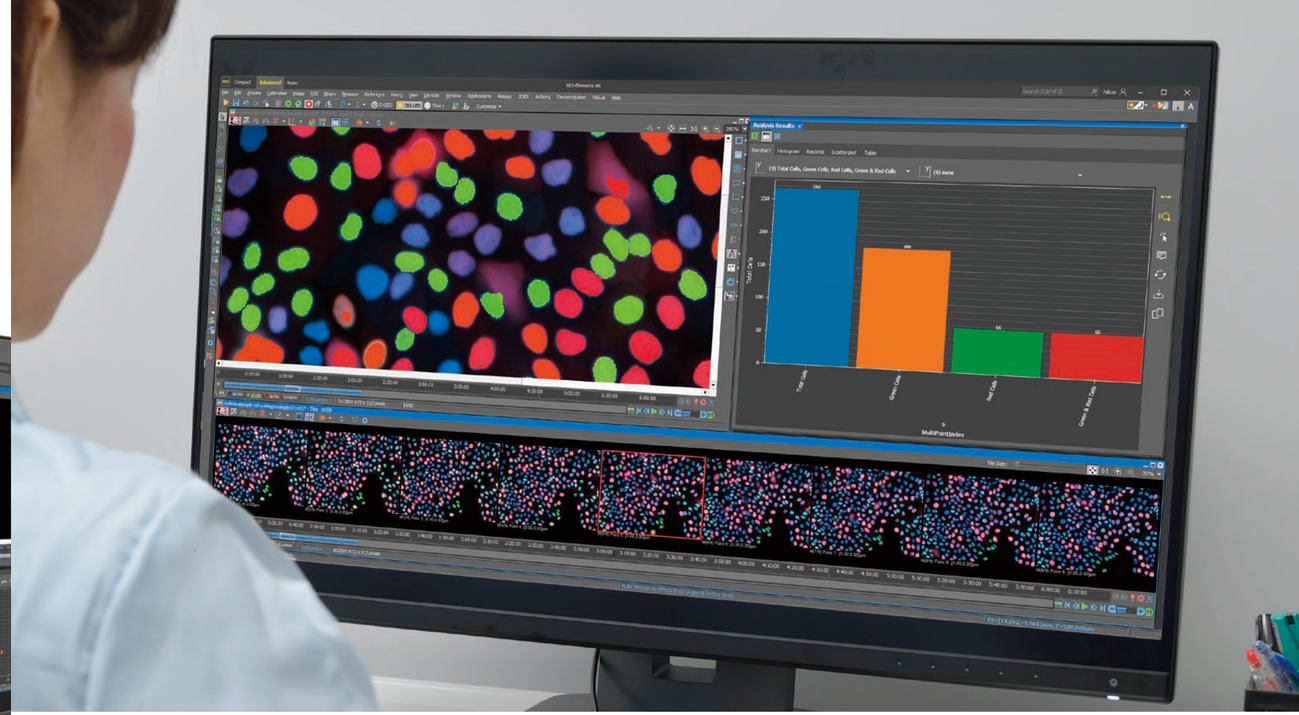
Completely customize to your research

From individual hardware selection and optimization to fine-tuning acquisitions routines and custom multi-channel binary analysis - you are in complete control of tailoring and creating a system built and inspired by your imagination.



LASER LINES	405NM	488NM	561NM	CHANNELS
	5%			ACTIVATION
		30%		IMAGING CH1
			50%	IMAGING CH2
		GREEN	RED	FILTER





Simple customization of advanced analysis automation

The NIS-Elements GA (General Analysis)/GA3 option enables easy customization of complex analysis or statistical flows such as 3D volume measurement and 4D tracking by simply dragging and dropping analysis templates, ensuring accurate and reliable analyses.

AI accelerates research efficiency

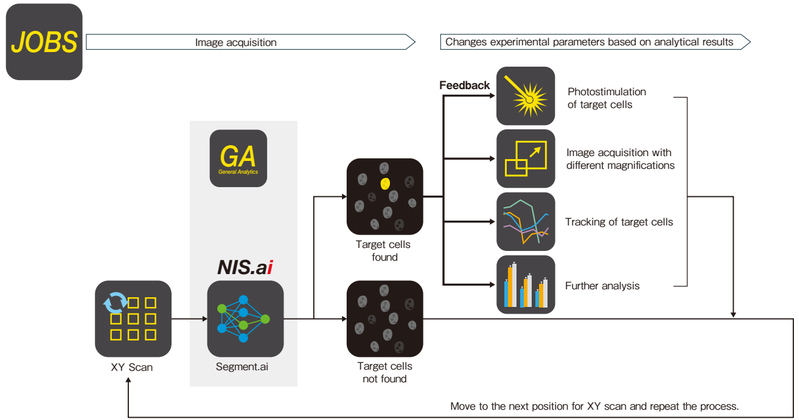
The optional NIS.ai module allows users to utilize pretrained AI networks for image processing, as well as create, annotate, and train custom AI networks for segmentation and analysis. Advanced image processing that was previously either impossible or required a great deal of time and skill, such as noise removal from images and feature extraction from unstained samples, can be performed automatically with high precision and repeatability. Post-acquisition AI-assisted segmentation and processing functionality further expand the capabilities of the microscope system and improve analysis.

Details of NIS.ai

Streamlining and advancing total workflow efficiency

By combining functions of NIS-Elements such as a General Analysis processing toolbox (GA/GA3) and acquisition workflow toolbox (JOBS) for customizing complex experiments, a user can develop various image acquisition protocols and streamline the entire experimental workflow, from image acquisition to analysis.

Various functions performed by applying NIS.ai such as detection and analysis of specific cell states can be incorporated into image acquisition sequences that influence the control parameters of the acquisition device during an experiment based on feedback from analysis results, improving throughput and enabling the building of more complex experimental systems.

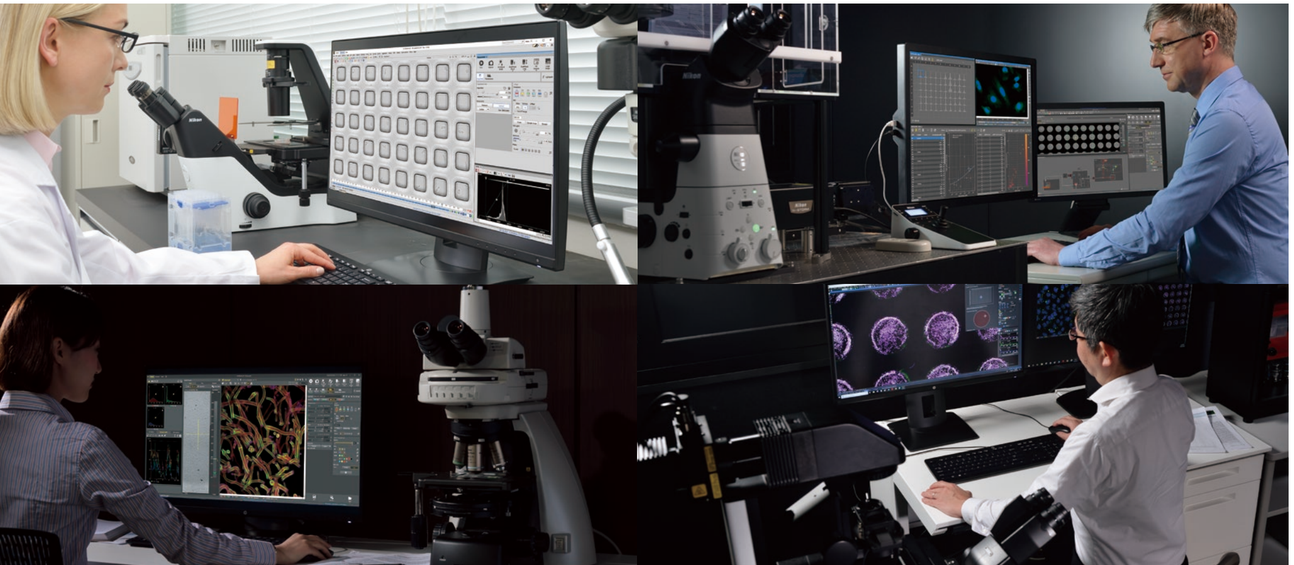


Example of incorporating GA and NIS.ai into JOBS

The image above shows an example of Segment.ai being used in an experiment. After multipoint imaging, AI is used to detect target cells. If target cells are detected, the result is fed back into the experimental sequence, and light stimulation or changes to the imaging conditions are performed. If target cells are not detected, the system moves to the next imaging point.

Making data handling smoother

In an imaging experiment, sometimes thousands of images are acquired at once. NIS-Elements provides a comfortable operating environment and helps streamline workflows for research involving 3D imaging and long-term time-lapse imaging data. Moreover, it allows images, metadata, and analysis results to be easily extracted into other formats and software, enabling data sharing for a wide range of uses. The reuse function allows more efficient reconfiguration of experimental conditions, enabling the user to quickly create a highly reproducible imaging environment.
These functions significantly improve the flexibility and efficiency of research environments.

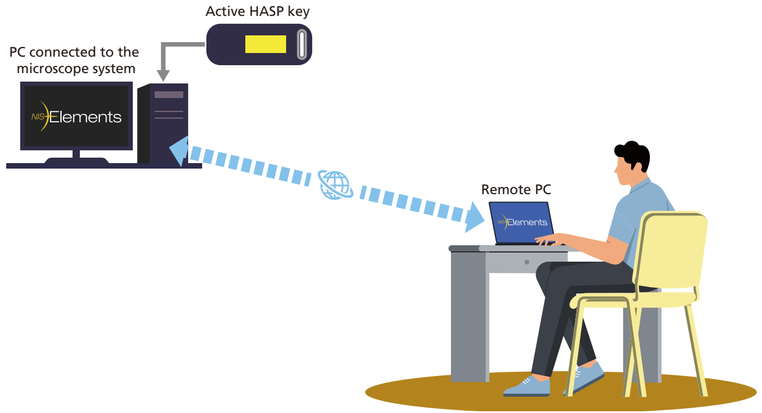


Remote control and monitoring

NIS-Elements can be started and controlled from a remote PC over a network connection using Windows' Remote Desktop Protocol (RDP). Remotely operating a microscope and analyzing acquired images is possible from a PC at a location other than that of the experimental equipment. Because it allows a user to monitor experimental processes from a PC at home or elsewhere, if any trouble occurs during an experiment, the cause can be investigated without going to the laboratory, and imaging over long time periods can be performed efficiently.
Installation of NIS-Elements on the remote PC is not required, eliminating the need for excessive license protection and reducing time and cost.

* Windows is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries. Each device requires that given conditions be fulfilled for a remote desktop connection. Please contact us for details.

Remote control of NIS-Elements via the Internet



Package Comparison

CAPTURE		AR	BR	D	C	LE
Confocal support					✓	
Multidimensional Imaging	Time Lapse	✓	✓	✓	✓	
	Z-Stack*	✓	✓	✓	✓	
	Multi Point*	✓	✓	✓	✓	
	Multichannel*	✓	✓		✓	
	4D with Experimental Preview		option			
	6D with Experimental Preview	option			✓	
Acquisition	AVI Acquisition	✓	✓	✓	✓	✓
	JOBS Acquisition	option			option	
	Simultaneous Dual / Triple / Quad Camera	option			option	
	Triggered Device Control	option	option		option	
	DAQ (TTL/ Analog) Control	option	option		option	
	Incubation	option	option	option	option	
	Volume Contrast	option			option	

* Note: Drivers for third party device control/automation are required.

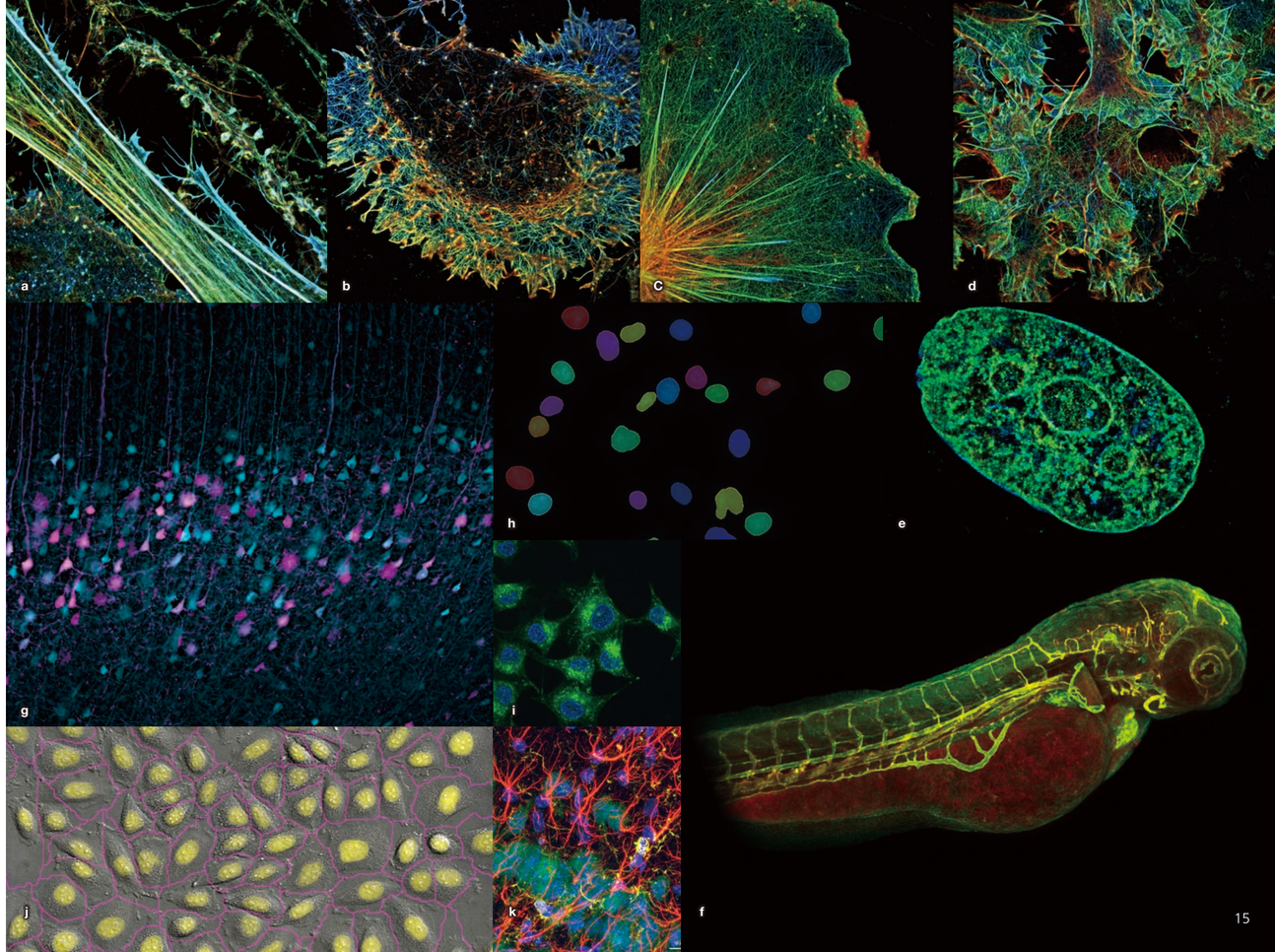
DISPLAY & PROCESSING		AR	BR	D	C	LE
AI	*Enhance.ai*	Option			Option	
	Convert.ai	Option			Option	
	Segment.ai	Option			Option	
	Segment Objects.ai	Option			Option	
	Denoise.ai	✓			✓	
	Clarify.ai	Option			Option	
	Auto All	✓			✓	
	Autosignal.ai	✓			✓	
Image	Annotation	✓	✓	✓	✓	✓
	Image Filters, Morphology	✓			✓	
	Image Arithmetic	✓	✓		✓	

DISPLAY & PROCESSING		AR	BR	D	C	LE
Image layers	Multi-dimensional image viewer	✓	✓	✓	✓	
	Binary Layers	✓	✓	option	✓	
2D/3D image creation	Snapshot	✓	✓	✓	✓	✓
	Movie	✓	✓	✓	✓	✓
	Interactive Movie / Volume Rendering	✓	✓		✓	
Interactive image display / Image manipulation	Tiling View	✓	✓	✓	✓	
	Max / Min Projections	✓	✓		✓	
	Ratio Viewing and Graphing	✓			✓	
	Plate View, Heat Maps, Sample Labeling	option			option	
	Volume View: 3D ND Crop	✓	✓		✓	
	Manual Channel Alignment	✓	✓	✓	✓	

CAPTURE, DISPLAY & MULTIFUNCTION		AR	BR	D	C	LE
Multi functional imaging	Smart Live	✓	✓	✓	✓	
	Experiment Setup	✓	✓		✓	
	Sample Navigation	✓	✓	✓	✓	
	Auto Focus	✓	✓	✓	✓	
	Live Compare	✓	✓	✓	✓	
	HDR (High Dynamic Range)	✓	option	option	✓	
	EDF / Real Time EDF	option	option	option	option	
	2D Large Image Stitching (Free shape)	✓	✓	✓	✓	
	3D Large Image Stitching (Free shape)	✓	✓	✓	✓	
	FRET/Custom Equation Editor	option			option	
	Deconvolution (2D Real Time/2D/3D)	option			option	

CAPTURE, DISPLAY & MULTIFUNCTION		AR	BR	D	C	LE
Macro	Macro Creation	✓	✓	✓	✓	
	Macro Debugger & Variable View	✓	option	option	✓	
User management	Multi-User Environment	✓	✓	✓	✓	
Database	High Content Database	option			option	
	Image Database (non HC)	option	option	option	option	
Report	Report Generator	✓	✓	✓	✓	

MEASUREMENT		AR	BR	D	C	LE
General measurement	Segmentation	✓			✓	
	Automated Measurement	✓	✓	option	✓	
	ROI(Region of Interest) Tools & Statistics	✓	✓		✓	
Multi-dimentional measurement	Time-Measurement	✓	option		✓	
	Volume Measurement	✓			✓	
	3D Volume Measurements	option			option	
	Z profile & 3D EDF Measurements	option	option	option	option	
	Kymograph	✓			✓	
Tracking	2D/3D Object Tracking	option			option	
Classifier	Pixel Classifier	✓	✓	option	✓	
	Object Classifier-Advanced Segmentation	option			option	
	Colocalization	✓			✓	
High content	Cell Counting	option			option	
	General Analysis (Automated image analysis)	option			option	
Industrial	Grain Sizing, Cast Iron & Filter Analysis	option	option	option	option	



Images on page 15

a. Hippocampal neurons and glia in culture
b. Growth cone of a neuron in culture
c. Glia in a neuronal culture
d. COS cells
e. Human fibroblasts
f. Zebrafish
g. Brain tissue section (after applying Clarify.ai)
h. Cell nuclei (after applying Enhance.ai)
i. HeLa cells
j. Unstained cell nuclei (after applying Convert.ai)
k. Mouse forebrain

NIS-Elements is not for clinical diagnostic use.

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. December 2025
©2025 NIKON CORPORATION

⚠ WARNING	TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

N.B. Export of the products* in this catalog is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Appropriate export procedure shall be required in case of export from Japan.
*Products: Hardware and its technical information (including software)
Monitor images are simulated.
Company names and product names appearing in this brochure are their registered trademarks or trademarks.

Biological microscope website

NIKON CORPORATION
Head office
1-5-20, Nishioi, Shinagawa-ku, Tokyo 140-8601, Japan
https://www.healthcare.nikon.com/en/

Manufacturer
471, Nagaodai-cho, Sakae-ku, Yokohama, Kanagawa 244-8533, Japan

Nikon Instruments Inc.
1300 Walt Whitman Road, Melville, N.Y. 11747-3064, U.S.A.
phone: +1-631-547-8500; +1-800-52-NIKON (within the U.S.A. only)
fax: +1-631-547-0299
https://www.microscope.healthcare.nikon.com/

Nikon Europe B.V.
Stroombaan 14, 1181 VX Amstelveen, The Netherlands
phone: +31-20-7099-000
https://www.microscope.healthcare.nikon.com/en_EU/

Nikon Precision (Shanghai) Co., Ltd.
CHINA phone: +86-21-6841-2050 fax: +86-21-6841-2060
(Beijing branch) phone: +86-10-5831-2028 fax: +86-10-5831-2026
(Guangzhou branch) phone: +86-20-3882-0550 fax: +86-20-3882-0580
https://www.nikon-precision.com.cn/

Nikon Canada Inc.
CANADA phone: +1-905-625-9910 fax: +1-905-602-9953

Nikon France, Succursale de Nikon Europe B.V.
FRANCE phone: +33-1-4516-4516

Nikon Deutschland, Zweigniederlassung der Nikon Europe B.V.
GERMANY phone: +49-211-9414-888

Nikon Italy, Branch of Nikon Europe B.V.
ITALY phone: +39-055-300-9601

Nikon Europe B.V., Amstelveen, Zweigniederlassung Schweiz (Egg/ZH)
SWITZERLAND phone: +41-43-277-2867

Nikon UK, Branch of Nikon Europe B.V.
UNITED KINGDOM phone: +44-208-247-1717

Nikon Österreich, Zweigniederlassung der Nikon Europe B.V.
AUSTRIA phone: +43-1-972-6111

Nikon Singapore Pte. Ltd.
SINGAPORE phone: +65-6559-3651 fax: +65-6559-3668

Nikon Australia Pty Ltd
AUSTRALIA phone: +61-2-8767-6900

Nikon Instruments Korea Co., Ltd.
KOREA phone: +82-2-6288-1900 fax: +82-2-555-4415

NIKON INDIA PVT. LTD.
INDIA phone: +91-124-4688-500

ISO 14001 Certified for NIKON CORPORATION

Code No. 2CE-MPCJ-7-US (2512)T