

#### **JUST ONE STEP AWAY**

The future of imaging, from microscopy to unique single molecule detection

ABBELIGHT SOLUTION PORTFOLIO

abbelight.com

# The company dedicated to researchers' daily life

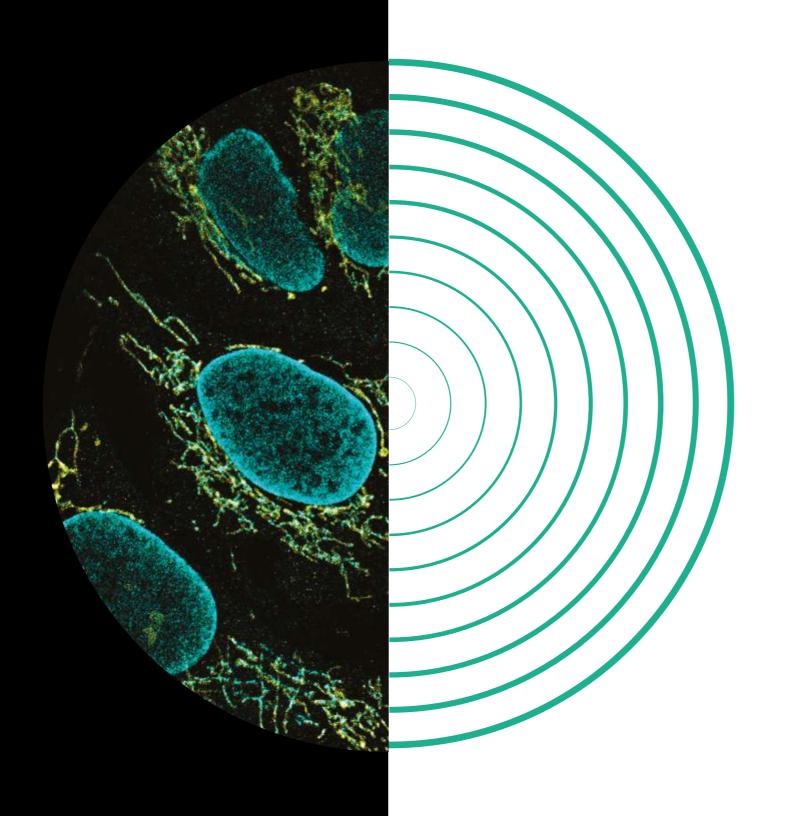
Abbelight developps a cutting-edge workflow solution in microscopy for researchers, biotech labs and medical facilities in many areas that allows them to have a complete turnkey solution, specifically configurated to diffraction limit up to nanoscale imaging.







Our product portfolio integrates a constantly evolving know-how to offer a complete solution from sample preparation to data management, including modular instrumentation.



#### **OUR MISSION**

At Abbelight we are driven to advance biological and biomedical research by making complex microscopy easy and accessible to everyone.

#### **OUR VISION**

Together with researchers, biotech labs and medical facilities, we aim to unlock the next generation of imaging tools to understand biology and help improve human health.

# APPLICATION DOMAINS

- Immuno-oncology
- Bacteriology
- Virology
- Extracellular Vesicles
- Neuroscience
- Structural Biology
- Cell Phenotyping
- Genomics

# Discover the ultimate multimodal bioimaging platform

Abbelight<sup>™</sup> SAFe multimodal imaging platform is the only upgradable solution avalable on the market which fits with all inverted microscopes.

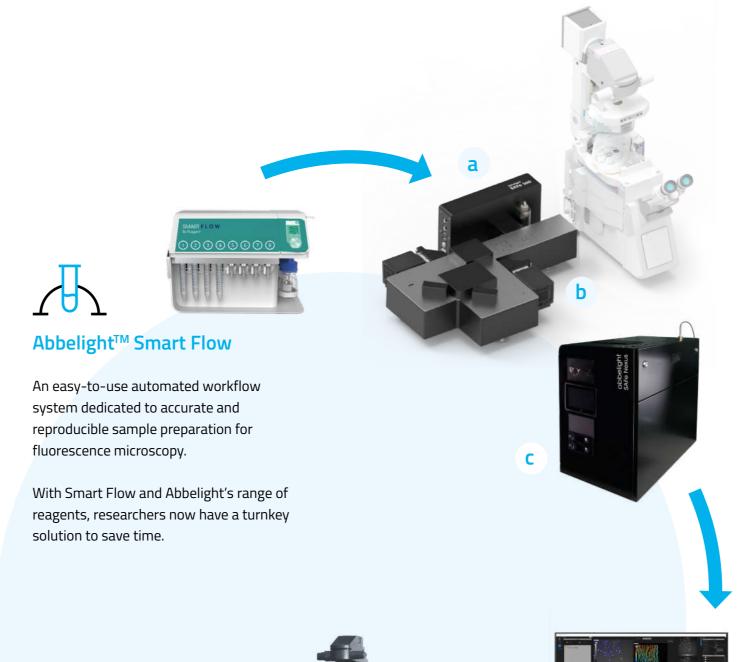
### Composed of different modular components

- A sample preparation device and a full range of reagents
- A detection module
- An excitation box
- An optronic bay
- A data management software

The multimodal platform allows a customisable configuration to match research projects in

- TIRF
- Widefield
- Super-resolution microscopy

An upgradable solution to adapt the system to research project evolution





#### a Abbelight™ SAFe Excitation

Abbelight SAFe Excitation box allows homogeneous illumination of samples and offers the possibility to have the largest FOV on the market.

#### **b** Abbelight<sup>™</sup> SAFe Detection

Abbelight SAFe Detection is an adaptable and flexible optical module that allows different imaging modalities, from microscopy to nanoscopy.

#### c Abbelight™ SAFe Nexus

Abbelight SAFe Nexus is an all-in-one optronic bay to control and synchronize the complete SAFe platform.





#### Abbelight<sup>™</sup> NEO SAFe Software

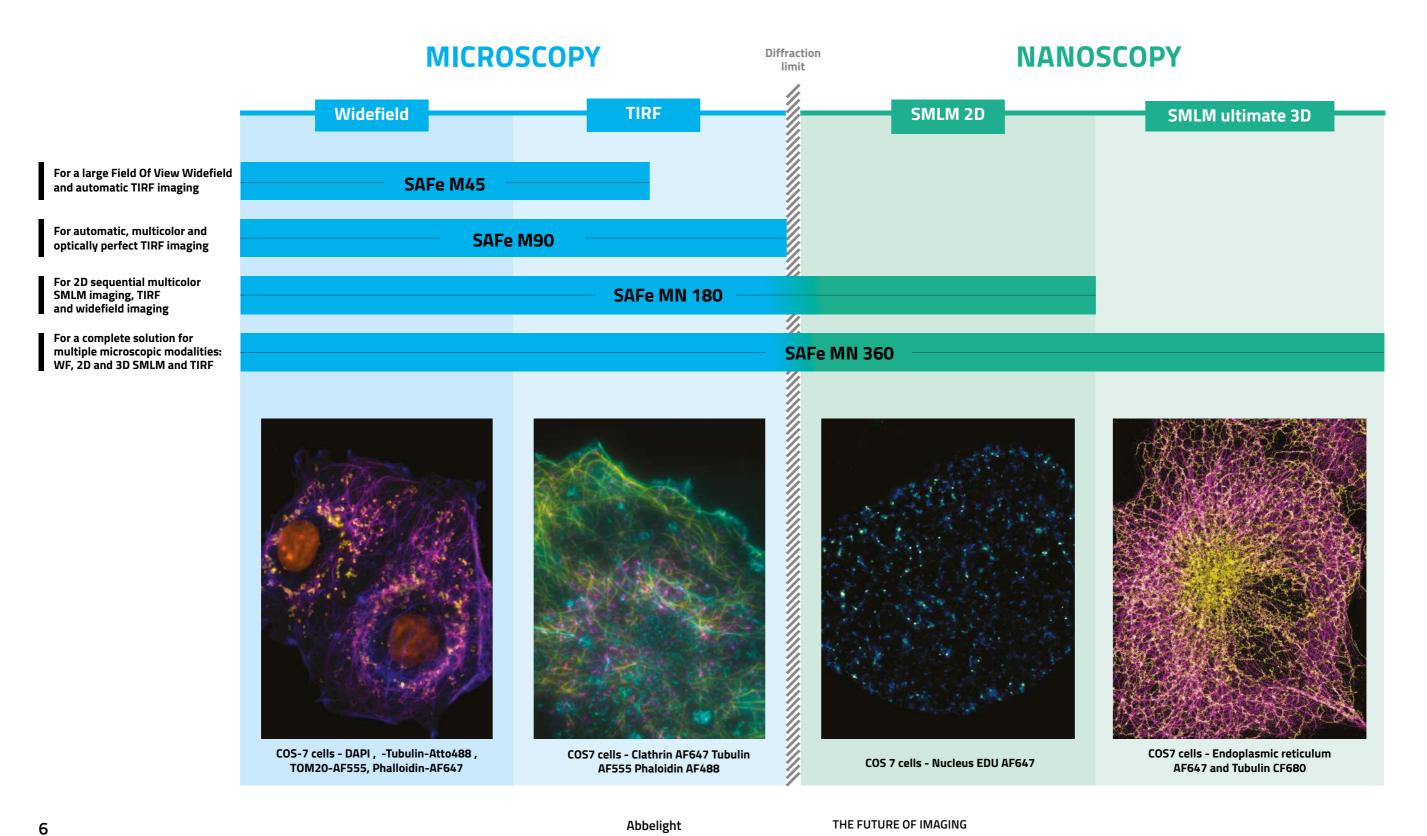
SAFe Neo Software Suite is the intuitive and user-friendly software that allows the production and manipulation of 3D quantitative data.

SAFe Neo Software Suite offers a complete workflow for all imaging modalities in Microscopy and Single Molecule Localization Microscopy.

4 Abbelight THE FUTURE OF IMAGING 5

### Ramp-up your research by working with the most scalable platform

# 4 Abbelight<sup>™</sup> SAFe configurations to match projects, budgets and goals



# Choose the platfom configuration to match your research needs

# Abbelight SAFe modular platform for microscopy and super-resolution

	<b>M45</b> WF, TIRF	<b>M90</b> WF, TIRF and multi-view	<b>MN 180</b> WF, TIRF, SMLM 2D	MN 360 WF, TIRF and multi-view, SMLM 2D   3D
	Capture the largest as sample as possible for better outcomes in biological areas	Visualize close to the coverslip with an optically perfect TIRF imaging	Watch with the largest FOV at the frontier of both worlds	Study from classical structural microscopy to extremly precise nanoscopy, with the most modular and complete platform endowed with the latest cutting-edge technology
FEATURES	Cost-effective hardware and software solution that provides researchers an optically perfect uniform Widefield and TIRF imaging thanks to Abbelight patented ASTER technology. Adaptable on any combination of microscopes, objectives and XYZ stages and accessories, our new product guarantees the automatically calibrated and reproducible position of TIRF angles.	Hardware and software solution that provides researchers with an optically perfect TIRF imaging. Adaptable on any combination of microscopes, objectives and XYZ stages and accessories, our new product guarantees the automatically calibrated and reproducible position of the TIRF angles. Coupled with a multicolor optical module, it offers an optimal and simultaneous imaging with the benefits of our ASTER technology that provides ultrawide field of biological structures close to the coverslip such as membranes, focal adhesions, and much more.	The only upgradable and adaptable solution on the market that gives researchers access to optimal 2D SMLM, TIRF and Widefield imaging with the largest field of view on the market. Thanks to its different modalities, SAFe MN180 allows to precisely answer biological questions in cell biology, genomics and in many other application fields.	The only multimodal microscopy and super resolution solution on the market offering a wide choice of extensively used imaging possibilities: WF, TIRF, 2D and 3D SMLM to offer researchers with a single complete and modular instrument answering with the highest precision to different problems in different fields of application such as study of membranes, neurosciences, cell biology etc
Adaptable to any inverted microscope				
ASTER illumination - largest FOV (150 x 150 at 100 x and 250 x 250 at 60X)				
Illumination mode: EPI Hilo TIRF				
Widefield imaging				
Automatic TIRF				
Multi Dimensional acquisition				
Sequential multicolor imaging				
Simultaneous multicolor imaging				
2D SMLM	$\bigcirc$			
Spectral demixing - Multicolor SMLM	$\bigcirc$			
Ultimate 3D SMLM				

# You can trust in our expertise and support

In addition to our technology and reliability, we are keen to give the best experience possible with our solutions. For this, we intend to offer the usability peace of mind. This means, you can rely on our scientific and technical team to support you in your choice of configuration that best suits your needs, in a way, that improves your imaging outcomes as best as possible while assisting you in case of any technical issue.

For this, we have developed a series of support programs.



#### Abbelight Care 1

- Preventive Maintenance
- Within 24-48 hours response
- Remote diagnostics and assistance

#### **Abbelight Care 2**

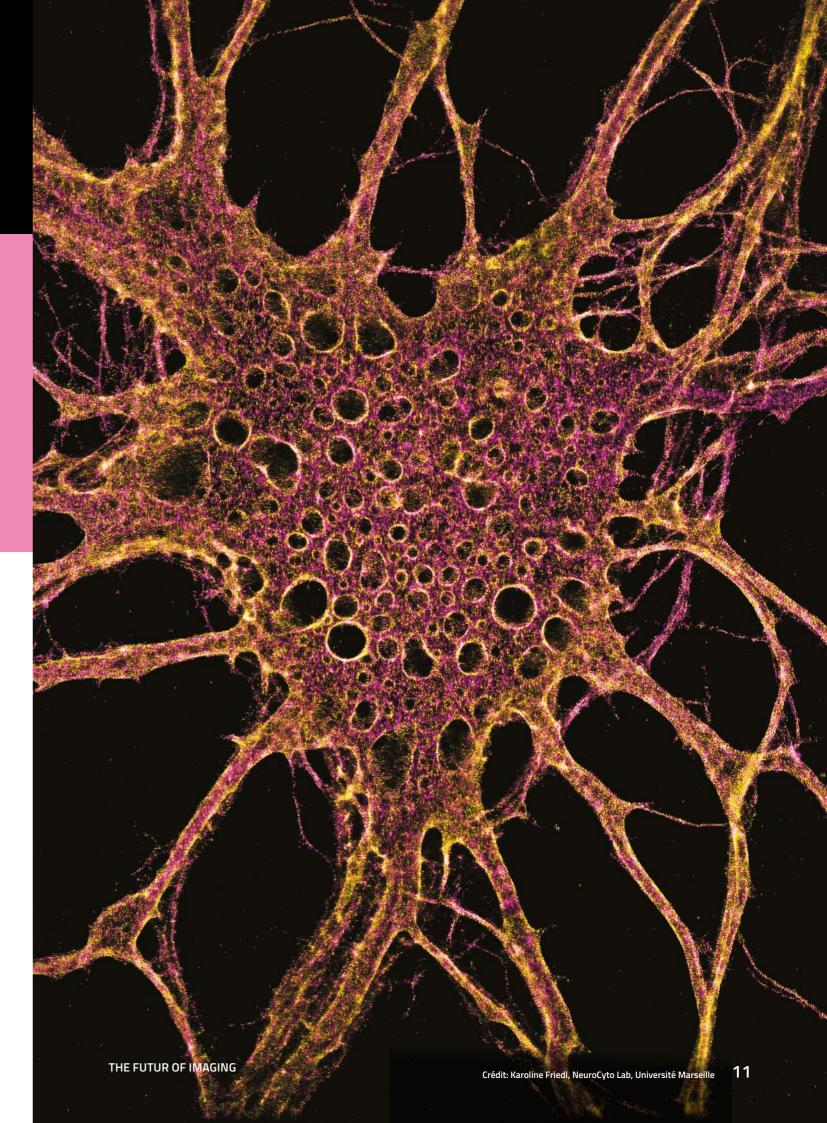
- Abbelight Care 1
- On-site assessment

#### **Abbelight Care 3**

- Abbelight Care 2
- 1 Year warranty extension

#### "À la Carte" Scientific Support

 Our Scientific Team is available to support your specific project: quotation upon request



Abbelight

# Why choose Abbelight?

#### **Our Solutions Offer**

- One platform suitable for multiple configurations and options to fit your project and your budget
- An upgradable solution to always have access to the latest technologies
- A data management software that allows access to large and advanced outcomes
- A unique, completely synchronized solution including sample preparation, instrument configuration and data analysis to simplify your daily activities.

## Our scientific expertise and our services

- A scientific support to go with the specificity of your research
- A team of applications scientists and field service engineers to assist if needed
- A mix of expertise in optics, biology, biophysics... Abbelight experts publish regularly on various scientific platforms

#### Our scientific references

Abbelight technologies have been applied to a number of biological fields - ranging from cytoskeleton architecture to chromatin dynamics - and in a great number of organisms – human cell lines, bacteria or yeast, drosophila tissue...

■ Bingham, Dominic, et al. Distinct Nano-Structures Support a Multifunctional Role of Actin at Presynapses. preprint, Neuroscience, 18 mai 2022. DOI.org (Crossref), https://doi. org/10.1101/2022.05.18.492480.

Product : Abbelight Smart Kit buffer

• Carsten, Alexander, et al. «MINFLUX imaging of a bacterial molecular machine at nanometer resolution». Methods and Applications in Fluorescence, vol. 11, no 1, janvier 2023, p. 015004. DOI.org (Crossref), https://doi.org/10.1088/2050-6120/aca880.

#### Product: Abbelight SAFe 180, Abbelight NEO Software

- Charif, Majida, et al. «Next-Generation Sequencing Identifies Novel PMPCA Variants in Patients with Late-Onset Dominant Optic Atrophy». Genes, vol. 13, no 7, juillet 2022, p. 1202. DOI. org (Crossref), https://doi.org/10.3390/genes13071202. Product: Abbelight Smart Kit buffer
- David, Liron, et al. Piezo Mechanosensory Channels Regulate Centrosome Integrity. preprint, Cell Biology, 12 avril 2022. DOI. org (Crossref), https://doi.org/10.1101/2022.04.12.488050.
- Product: Abbelight SAFe 180, Abbelight NEO Software

  Di Minin, Giulio, et al. «TMED2 Binding Restricts SMO to the ER and Golgi Compartments». PLOS Biology, édité par Joshua Mark Brickman, vol. 20, no 3, mars 2022, p. e3001596. DOI.org (Crossref), https://doi.org/10.1371/journal.pbio.3001596.
- Product: Abbelight Smart Kit buffer
   Friedl Karoline, et al. Robust and Fast Multicolor Single
  Molecule Localization Microscopy Using Spectral Separation
  and Demixing. preprint, Cell Biology, 24 janvier 2023. DOI.org
  (Crossref), https://doi.org/10.1101/2023.01.23.525017.
  Product: Abbelight Smart Kit buffer, Abbelight SAFe 360,
  Abbelight NEO Software

- Gazzola, Morgan, et al. «MicrotubulesSelf-Repair in Living Cells». Current Biology, vol. 33, no 1, janvier 2023, p. 122-133.e4. DOI.org (Crossref), https://doi.org/10.1016/j.cub.2022.11.060. Product: Abbelight Smart Kit buffer, Abbelight SAFe 360, Abbelight NEO Software
- He, Jin, et al. «Heterozygous SERYL TRNA Synthetase 1 Variants Cause CHARCOT—MARIE—TOOTH Disease». Annals of Neurology, vol. 93, no 2, février 2023, p. 244 56. DOI.org (Crossref), https://doi.org/10.1002/ana.26501.

#### Product : Abbelight Smart Kit buffer, Abbelight SAFe 360, Abbelight NEO Software

- Jackson, Rachel E., et al. «Correlative Live-Cell and Super-Resolution Imaging to Link Presynaptic Molecular Organisation With Function». Frontiers in Synaptic Neuroscience, vol. 14, février 2022, p. 830583. DOI.org (Crossref), https://doi.org/10.3389/fnsyn.2022.830583. Product: Abbelight SAFe RedSTORM. Abbelight NEO Software
- Jouchet, Pierre, et al. «Time-Modulated Excitation for Enhanced Single-Molecule Localization Microscopy». Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, vol. 380, no 2220, avril 2022, p. 20200299. DOI.org (Crossref), https://doi.org/10.1098/rsta.2020.0299.

#### Product: Abbelight Smart Kit buffer, Abbelight NEO Software

• Khayenko, Vladimir, et al. «A Versatile Synthetic Affinity Probe Reveals Inhibitory Synapse Ultrastructure and Brain Connectivity\*\*». Angewandte Chemie International Edition, vol. 61, no 30, juillet 2022. DOI.org (Crossref), https://doi.org/10.1002/anie.202202078. Product: Abbelight Smart Kit buffer, Abbelight SAFe 360, Abbelight

### NEO Software Liu, Wei, et al. «Mitofusin-2 Regulates Leukocyte Adhesion and

- 2 Integrin Activation». Journal of Leukocyte Biology, vol. 111, no 4, mars 2022, p. 771 91. DOI.org (Crossref), https://doi.org/10.1002/JLB.1A0720-471R.
- Lumkwana, D., et al. «Investigating the Role of Spermidine in a Model System of Alzheimer's Disease Using Correlative Microscopy and Super-resolution Techniques». Frontiers in Cell and Developmental Biology, vol. 10, mai 2022, p. 819571. DOI.org (Crossref), https://doi.org/10.3389/fcell.2022.819571.

#### Product : Abbelight Smart Kit buffer

 Martin, Emmanuel, et Magali Suzanne. «MBeRFP: A Versatile Fluorescent Tool to Enhance Multichannel Live Imaging and Its Applications». Development, vol. 149, no 16, août 2022, p. dev200495. DOI.org (Crossref), https://doi.org/10.1242/dev.200495.
 Product: Abbelight SAFe 360 • Melamed, Shay, et al. «Initiation of Fibronectin Fibrillogenesis Is an Enzyme-Dependent Process.» preprint, Cell Biology, 17 novembre 2022. DOI.org (Crossref), https://doi.org/10.1101/2022.11.16.516843.

#### Product: Abbelight SAFe 360, Abbelight NEO Software

• Pesce, Elisa, et al. «Exosomes Recovered From the Plasma of COVID-19 Patients Expose SARS-CoV-2 Spike-Derived Fragments and Contribute to the Adaptive Immune Response». Frontiers in Immunology, vol. 12, janvier 2022, p. 785941. DOI.org (Crossref), https://doi.org/10.3389/fimmu.2021.785941.

#### Product : Abbelight Smart Kit buffer

• Rajbanshi, Binita, et al. «Localization, Induction, and Cellular Effects of Tau Phosphorylated at Threonine 217 1». Alzheimer's & Dementia, janvier 2023, p. alz.12892. DOI.org (Crossref), https://doi.org/10.1002/alz.12892.

#### Product : Abbelight Smart Kit buffer, Abbelight SAFe 180, Abbelight NFO Software

• Rigby, Mark, et al. «Multi-Synaptic Boutons Are a Feature of CA1 Hippocampal Connections That May Underlie Network Synchrony.» preprint, Neuroscience, 30 mai 2022. DOI.org (Crossref), https://doi.org/10.1101/2022.05.30.493836.

#### Product : Abbelight SAFe RedSTORM, Abbelight NEO Software

• Rizo, Tania, et al. «Store-Operated Calcium Entry Is Reduced in Spastin-Linked Hereditary Spastic Paraplegia». Brain, vol. 145, no 9, septembre 2022, p. 3131 46. DOI.org (Crossref), https://doi.org/10.1093/brain/awac122.

#### Product : Abbelight Smart Kit buffer, Abbelight SAFe 180, Abbelight NEO Software

• Saguy, Alon, et al. «DBlink: Dynamic Localization Microscopy in Super Spatiotemporal Resolution via Deep Learning.» preprint, Bioengineering, 3 juillet 2022. DOI.org (Crossref), https://doi.org/10.1101/2022.07.01.498428.

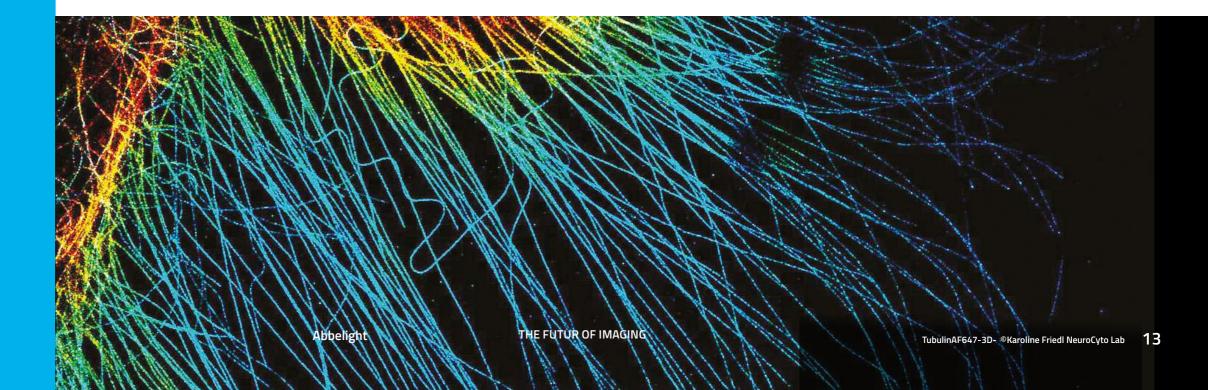
#### Product : Abbelight Smart Kit buffer

• Shoji, Kenji F., et al. «The Mechanosensitive TRPV2 Calcium Channel Promotes Human Melanoma Invasiveness and Metastatic Potential». EMBO Reports, février 2023. DOI.org (Crossref),

https://doi.org/10.15252/embr.202255069.

Product : Abbelight Smart Kit buffer, Abbelight SAFe 180, Abbelight NEO Software

To learn more, please visit this page: abbelight.com/Team\_publication



### **DID YOU KNOW?**

4

Passionate scientists created Abbelight 3

Abbelight is dealing in several continents: Europe, Asia and North America

Over 60

- SAFe installations
- number of employees

34%

of the company expenses into R&D

80%

part of sales realised outside the French market

and

50% outside Europe

150x150 nm

The largest FOV in SMLM

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Scientific publications mentioning Abbelight solutions.

2013

First buffer recipe

2015 0

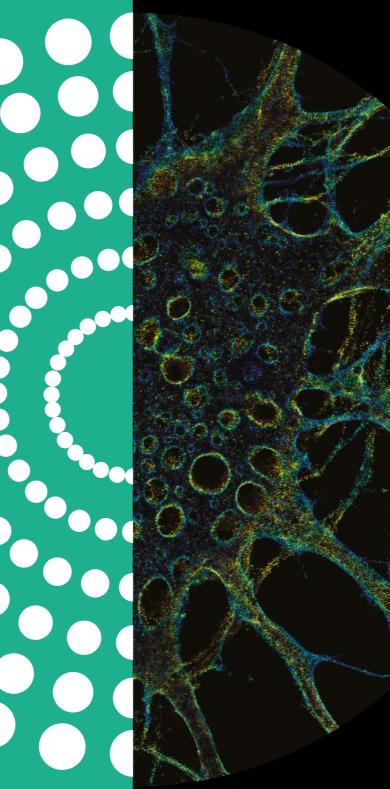
Release of the Abbelight
SMLM technology published
in Nature Photonics.

2017 •

First SAFe system set-up in an academic facility

2019

First oversea SAFe system set-up in Germany



Abbelight

THE FUTUR OF IMAGING

14



Founded in 2016, Abbelight is a fast-growing company specialized in imaging solutions focusing on microscopy and unique single molecule detection (super-resolution).

The portfolio integrates a constantly evolving knowhow on chemistry, optics and computer science to offer a complete solution, from sample preparation to data management, including an optimal bio-imaging platform that can be adapted to all researchers', biotech labs' and medical facilities' needs.

Abbelight is a French company developed by four passionate researchers who aim to help improve human health in various areas such as bacteriology, extracellular vesicles, neurosciences, structural biology...

Today, Abbelight employs over 60 people who are all driven by the goal of providing the best solutions and support to our customers all around the world.



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