

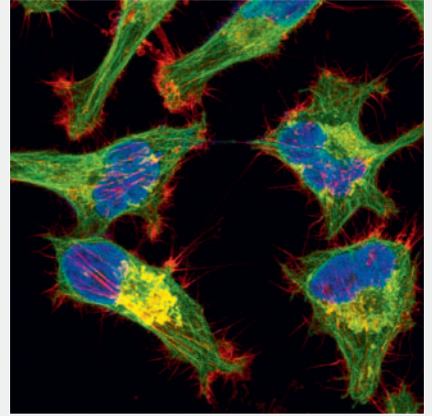
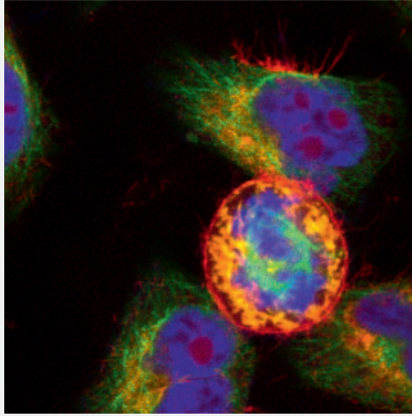
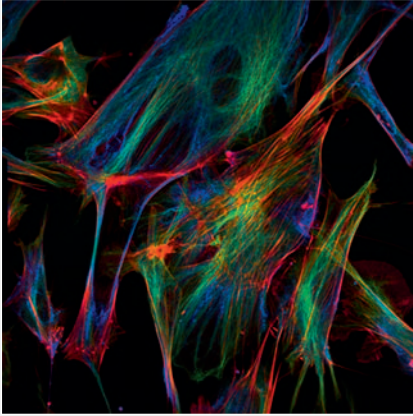


Leica TCS SP5 X

X-citing Life – The Only Confocal That Tunes Into Any Excitation

Living up to Life

Leica
MICROSYSTEMS



- Ready for any dye the future brings
- The only system that fully adapts to the sample
- Full freedom and flexibility in emission AND excitation
- All you need for imaging – today and tomorrow!





Biological and medical research fluorescence imaging has evolved from studying one or two features in a specimen to examining even more features and their dynamic interactions in the cellular environment. This requires a variety of fluorescent dyes to study four, five, or more proteins simultaneously. As new dyes are developed and used, the ability to optimally excite and detect these fluorophores is necessary in both living and fixed specimen.

Until now, research in multi-user facilities or institutes has been limited by the type or number of dyes that could be excited. Conventional laser scanning imaging systems are equipped with a set of gas or solid state lasers that emit fixed laser lines for use. Using this equipment the researcher has to choose the dyes and labels for detection according to the imaging system. The experiment has to be compromised to the available instrumentation.

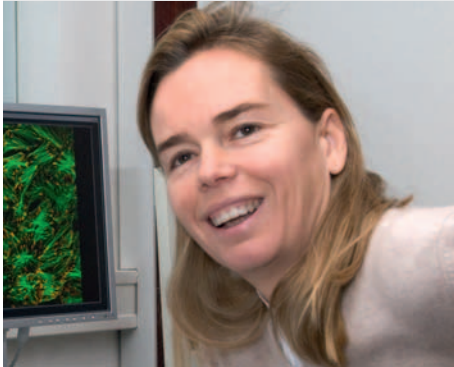
Leica TCS SP5

X-citing Life!

The Leica TCS SP5 X supercontinuum confocal unites the broadband capabilities of the Leica TCS SP5 AOBS[®] and the freedom and flexibility to select any excitation line within the continuous range of 470 to 670 nm.

With our patented spectral detection technology you have complete freedom to choose the detection area in up to five confocal PMT channels. The acousto-optical beam splitter AOBS[®] is the only option for a supercontinuum laser, and allows the selection of up to eight simultaneous lines from anywhere in the white light spectrum.

The Only System that Fully Adapts to the Sample



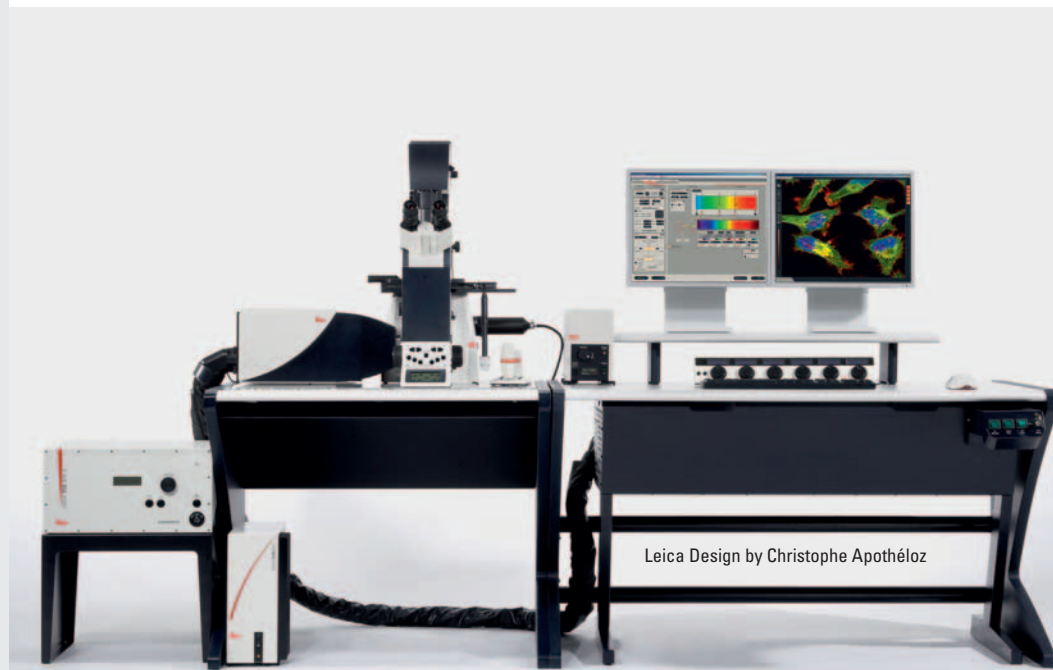
“The White Light Laser offers a tremendous flexibility and will open our minds to new imaging applications.”

Dr. Maria C. Montoya
Confocal Microscopy and Cytometry Unit
Biotechnology Program
Spanish National Cancer Center (CNIO)
Madrid, Spain

Why should researchers be limited because the dyes for imaging can not be excited sufficiently? Why should limitations be placed on the laser configuration choices for a multi-user core facility?

The Leica TCS SP5 X features a fully tunable supercontinuum laser that provides excitation lines from 470 nm to 670 nm in the visible spectrum. Easy control of excitation lines is at your fingertips. Freedom to choose the specific excitation line in 1 nm increments allows optimal adjustment of the excitation to the special properties of the dye. This flexibility decreases damage to the cell and reduces unwanted cross-excitation.

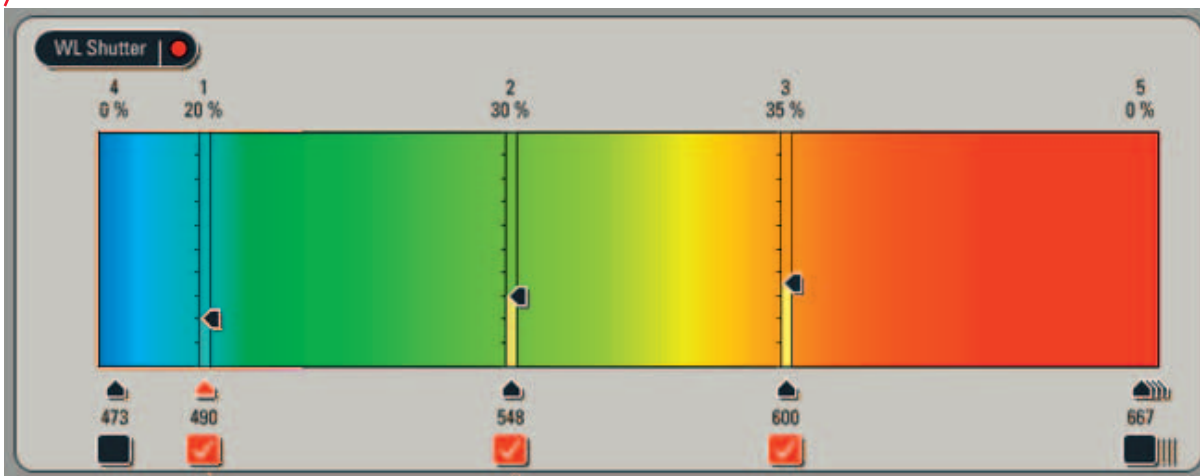
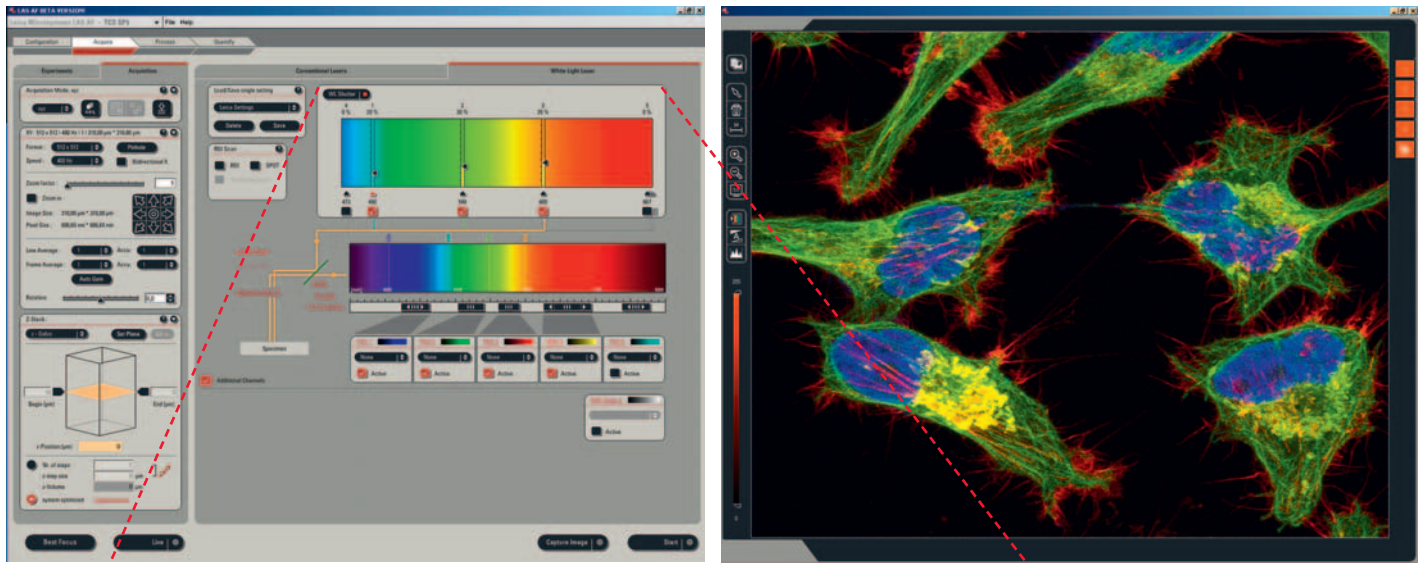
The Leica TCS SP5 X is the only confocal system that adapts to the research needs of today and tomorrow.



visible and ultraviolet radiation:



Intuitive Interface Allows Full Freedom and Flexibility for Scanning



- Excitation lines can easily be selected to any wavelength with 1 nm accuracy
- Tuning via the LCD control panel allows to select excitation light while scanning
- Easy intuitive interface makes the Leica TCS SP5 X perfect for basic and advanced users
- Interface allows easy access to all scanning parameters for both supercontinuum and fixed laser lines

- AOBS[®] allows any combination of 8 laser lines – perfect for supercontinuum laser
- Greater sensitivity than any other confocal
- AOTF-controlled laser power
- Combination of fixed laser lines and supercontinuum lines together poses no problem



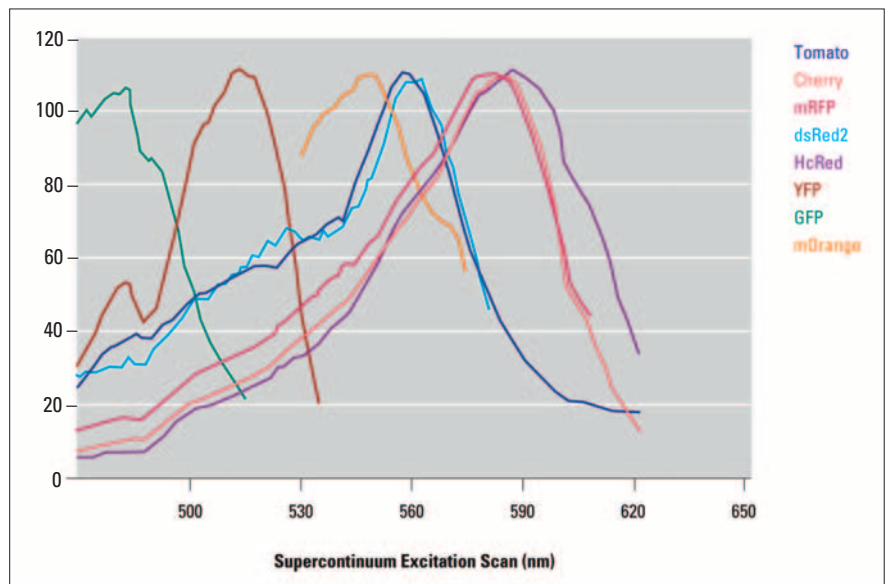
“The supercontinuum laser and AOBS are a perfect match. Full freedom of a white light laser could only be realized with the AOBS. The Leica TCS SP5 X saves experimental time to focus more on data analysis.”

Prof. Alberto Diaspro
 Department of Physics
 University of Genoa
 Genoa, Italy

Opening Doors and Opening

Ready for any new dye of the future

The number of available fluorescent dyes is growing tremendously. The ability to excite these dyes optimally with ideal spectral detection and minimal sample damage from high excitation sources is challenging. For most imaging applications the number of dye pairs available is endless, however, the ability to properly excite and control cross-excitation is a difficult procedure with the limited fixed laser lines available in today's laser scanning confocal systems.

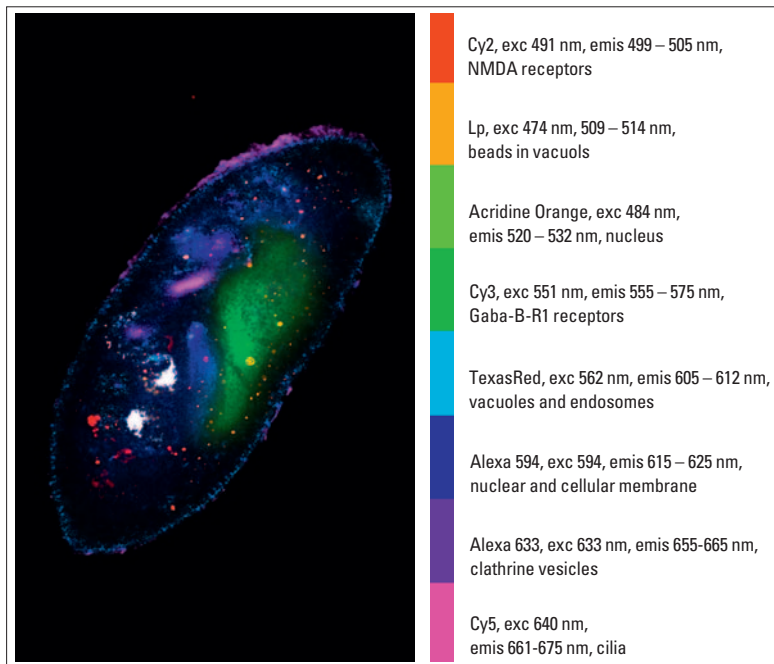


The TCS SP5 X perfectly adapts to any dye that will come today or tomorrow. With 200 nm of freely tunable excitation lines, the Leica TCS SP5 X can be tuned to provide optimal excitation of any available dye. This flexibility is critical for core facilities that service hundreds of users with various samples and various dyes. There will never be a need to turn away any sample or have difficult times exciting new dyes.

Minds

A new dimension to spectral separation

New GFP mutants are all perfectly separated by excitation mapping with the Leica TCS SP5 X



Paramecium stained with 8 fluorescent dyes. Excitation and emission lambda scans were obtained to determine optimal imaging conditions for each dye. Courtesy of P. Ramoino and P. Bianchini, LAMBS-MicroScoBio, Dept. of Physics, University of Genoa, Italy

Most confocal systems on the market claim to have some capability to “spectrally” separate dyes. The Leica TCS SP5 X allows the use of emission scan dye separation and excitation scan dye separation for a new dimension in spectral imaging.

This technology opens new doors to confocal microscopy applications including excitation AND emission mapping that can be used for new dye development, or existing applications such as FRET.

What can the Leica TCS SP5 X do for you?

- Up to 5 spectral detection channels
- Tune to exact spectral range while scanning
- Almost no light loss from first to last channel
- Cooled PMTs allow for greater sensitivity and less noise
- Never worry about barrier filters again
- Best red emission detection available
- Emission and excitation scans allow for new dimensions in spectral imaging
- 2 years of scanning light guaranteed



“With the TCS SP5 X we are solving problems we did not know existed.”

Dr. Kees Jalink

Department of Cell Biology H1
The Netherlands Cancer Institute
Amsterdam, The Netherlands

“With the user, for the user”

Leica Microsystems

Leica Microsystems operates globally in four divisions, where we rank with the market leaders.

● Life Science Division

The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems' customers at the leading edge of science.

● Industry Division

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

● Biosystems Division

The Leica Microsystems Biosystems Division brings histopathology labs and researchers the highest-quality, most comprehensive product range. From patient to pathologist, the range includes the ideal product for each histology step and high-productivity workflow solutions for the entire lab. With complete histology systems featuring innovative automation and Novocastra™ reagents, Leica Microsystems creates better patient care through rapid turnaround, diagnostic confidence, and close customer collaboration.

● Surgical Division

The Leica Microsystems Surgical Division's focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

The statement by Ernst Leitz in 1907, “with the user, for the user,” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: **Living up to Life.**

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| | | | |
|-------------------------|-----------------------|-------------------------|------------------------|
| Australia: | North Ryde | Tel. +61 2 8870 3500 | Fax +61 2 9878 1055 |
| Austria: | Vienna | Tel. +43 1 486 80 50 0 | Fax +43 1 486 80 50 30 |
| Belgium: | Groot Bijgaarden | Tel. +32 2 790 98 50 | Fax +32 2 790 98 68 |
| Canada: | Richmond Hill/Ontario | Tel. +1 905 762 2000 | Fax +1 905 762 8937 |
| Denmark: | Herlev | Tel. +45 4454 0101 | Fax +45 4454 0111 |
| France: | Rueil-Malmaison | Tel. +33 1 47 32 85 85 | Fax +33 1 47 32 85 86 |
| Germany: | Wetzlar | Tel. +49 64 41 29 40 00 | Fax +49 64 41 29 41 55 |
| Italy: | Milan | Tel. +39 02 574 861 | Fax +39 02 574 03392 |
| Japan: | Tokyo | Tel. +81 3 5421 2800 | Fax +81 3 5421 2896 |
| Korea: | Seoul | Tel. +82 2 514 65 43 | Fax +82 2 514 65 48 |
| Netherlands: | Rijswijk | Tel. +31 70 4132 100 | Fax +31 70 4132 109 |
| People's Rep. of China: | Hong Kong | Tel. +852 2564 6699 | Fax +852 2564 4163 |
| Portugal: | Lisbon | Tel. +351 21 388 9112 | Fax +351 21 385 4668 |
| Singapore | | Tel. +65 6779 7823 | Fax +65 6773 0628 |
| Spain: | Barcelona | Tel. +34 93 494 95 30 | Fax +34 93 494 95 32 |
| Sweden: | Kista | Tel. +46 8 625 45 45 | Fax +46 8 625 45 10 |
| Switzerland: | Heerbrugg | Tel. +41 71 726 34 34 | Fax +41 71 726 34 44 |
| United Kingdom: | Milton Keynes | Tel. +44 1908 246 246 | Fax +44 1908 609 992 |
| USA: | Bannockburn/Illinois | Tel. +1 847 405 0123 | Fax +1 847 405 0164 |

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