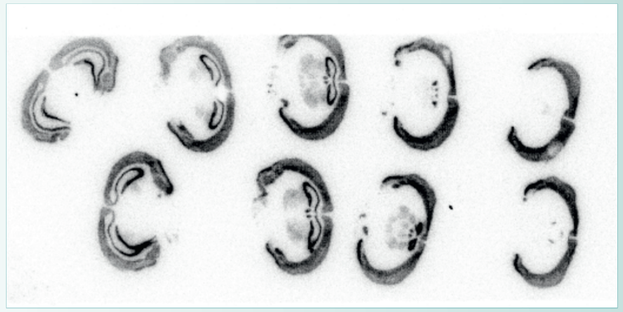
## SENSITIVITY & SPEED:
## From a millibecquerel to kilobecquerel image

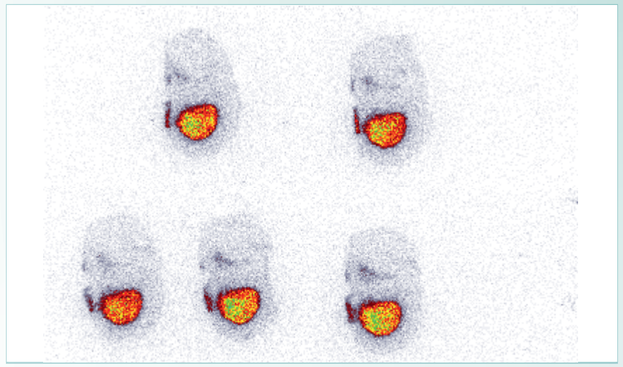
Thanks to its patented technology, the BeaQuant delivers unequalled sensitivity (0.0005 cpm/mm$^2$). This extreme sensitivity cuts exposure time and increases your volume of imagery.



*$^{35}$S (Courtesy of Sylvie Dumas, Inserm U1130)*

## SAFETY: Optimal protection for users

The BeaQuant offers you total protection against X and gamma rays and uses non-toxic, non-flammable and non-corrosive gases.



*$^{18}$F (Courtesy of Sylvie Chalon, Inserm U930)*

## CHARACTERISTICS

**1. Technology:** Direct count.

**2. Performance:**
- Spatial resolution over the entire field of view.
  - Alpha: 20 µm.
  - Beta: 20 µm.
  - High energy beta or beta plus: 50 µm.
- Linearity over 5 orders of magnitude.
- Sensitivity: 0.0005 cpm/mm$^2$.

**3. Modes:** All radioisotopes.

**4. Isotope separation**

**5. Field of view:** 23 x 23 cm$^2$.
- 18 standard microscope slides (75 x 25 mm).
- 16 petrographic slides.
- Other format available on request.

**6. Softwares:**
- Beavacq to control the BeaQuant.
- Beamage for processing and exporting images.

**7. Safety:** Shielded detector using inert gases (Ne and $CO_2$).

**8. Dimensions:** 85 x 55 x 120 cm.

**9. Weight:** 240 kg.

## For further information: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ai4r

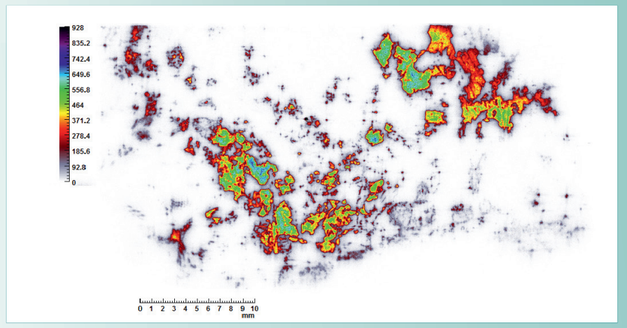
Atlantic Instruments for Research

**Be smart, BeaQuant**

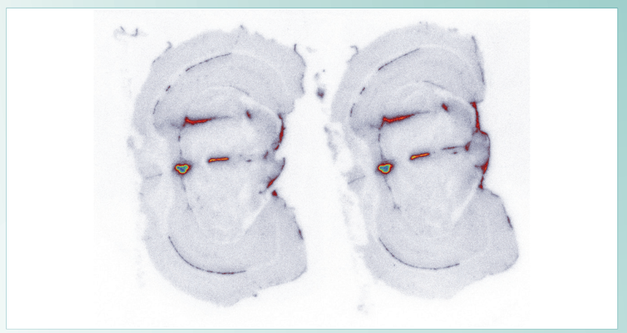
# A new generation of instruments, driven by cutting-edge technology

**AI4R** has devised and designed a new generation of gas detectors whose **innovative technology combines speed, precision and sensitivity**, to locate the radioactivity of **all alpha, beta minus and beta plus emitters** in a **wide field of view** and in a **shorter exposure time.**

The fruit of 10 years' research, the creation of the BeaQuant* is driven by our desire to **offer you better image quality, greater freedom in handling** and **more user comfort**.




*Natural Uranium (Courtesy of Paul Sardini, IC2MP - Université de Poitiers)*



*$^{3}$H (Courtesy of Sylvie Chalon, Inserm U930)*

** Invention of Subatech UMR 6457 (Ecole des Mines of Nantes/University of Nantes/Armines/CNRS).*

# The BeaQuant: a new experience in the field of autoradiography

## Autoradiography revisited

Designed to meet the demands of cutting-edge research, the BeaQuant's performance features are unique**:**

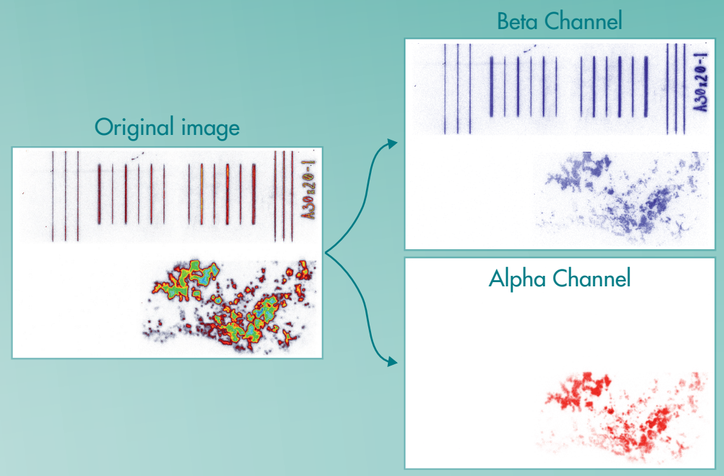
- **Quantitative mapping of radioactivity.**
- **Maximum resolution throughout the field of view.**
- **100% digital acquisition in real time.**
- **Shorter exposure time.**

## QUANTIFICATION: Direct count imagery

The BeaQuant lets you perform digital imaging in pure radioactivity metering mode: the signal of each disintegration is identified and measured.

Each disintegration is detected independently, thereby offering precise quantification of radiodistribution. Quantification is independent of the activity thanks to a linearity over 5 orders of magnitude and fully consistent over the entire field of view.

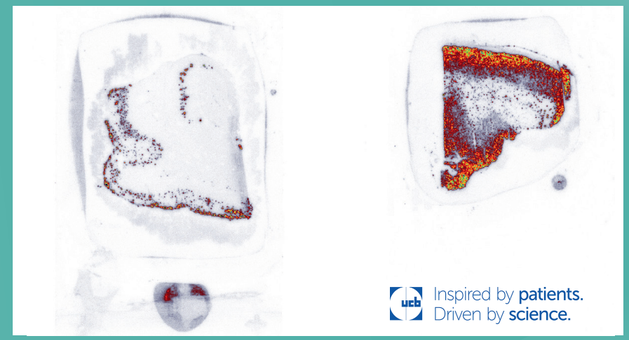
The image is a direct representation of the number of disintegrations.




*Alpha/Beta discrimination : chain of natural uranium (bottom), tritium/carbon mixture (top)*

## RESOLUTION: Extreme precision, whatever the field of view

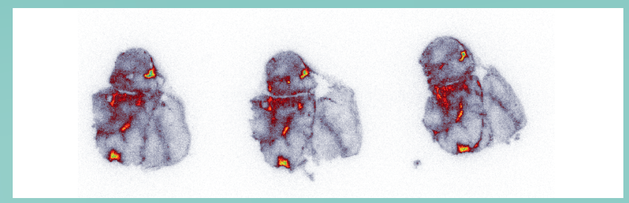
The BeaQuant offers you the highest spatial resolution, irrespective of the field of view.




*$^{3}$H (Courtesy of Delphine Viot, UCB Biopharma)*

## Real-time image

You see the image form event by event. You evaluate image quality at any time. The final image is totally digital. So there is no risk of underexposure or overexposure. The data can also be exported to any image processing tool.



*Tumor labelled with $^{89}$Zr (Courtesy of Michel Chérel, Sébastien Gouard, CRCNA - Inserm U892)*