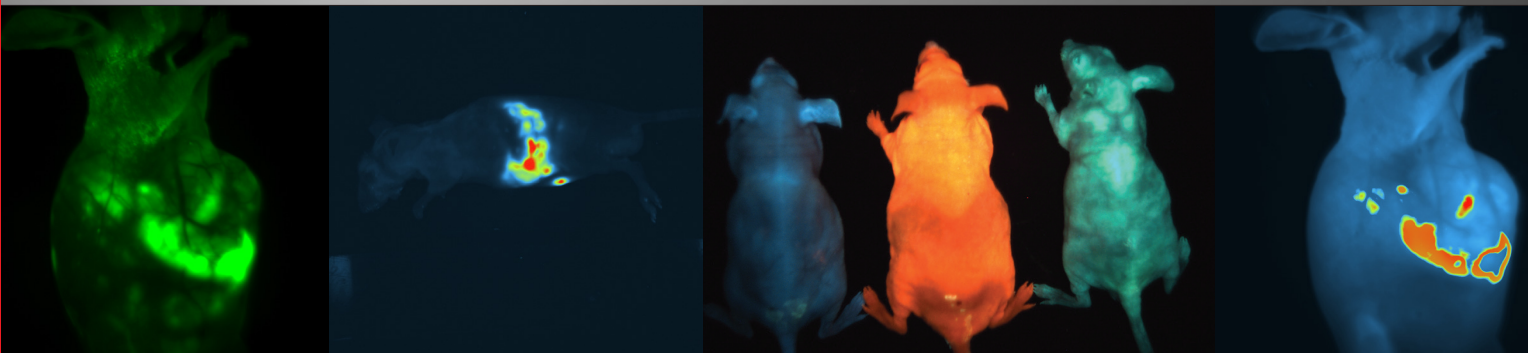


UVP iBox® Scientia™

Bioluminescence and fluorescence applications

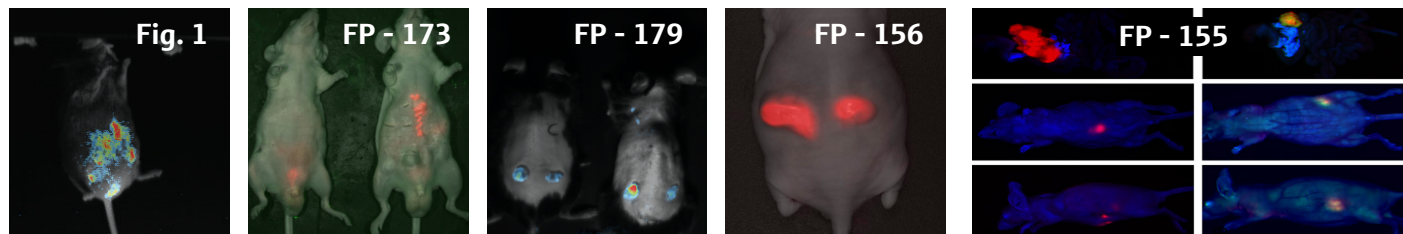
- In vivo
- Tumor studies
- Heart disease
- Inflammation
- Cancer research
- Metastasis
- Immunology
- Small animal imaging
- Bacterial/viral infections
- Gene expression



Non-invasive whole animal in vivo imaging.

The UVP iBox® Scientia™ features high sensitivity imaging and accurate quantification of bioluminescent and fluorescent sources. The system is versatile and can support imaging of any probe in the visible to near infrared (NIR) range.

Some examples of applications follow. For other examples and full Application Notes on these topics, go to www.analytik-jena.us



Bioluminescent Imaging

Luciferase based bioluminescent image showing a response triggered expression of luciferase, combined with a white light image showing an exposure of just two and half minutes. Captured using the iBox Scientia with the BioCam 900 camera. Fig 1.

Fast imaging system for fluorescent proteins

Fluorescence can be used to report the location of biomolecules or tissue in vivo with high contrast to background. Mice expressed GFP, RFP, YFP and CFP and were imaged using the iBox Scientia.

Real-time imaging of nuclear-cytoplasmic dynamics in UV light killing of cancer cells expressing fluorescent proteins

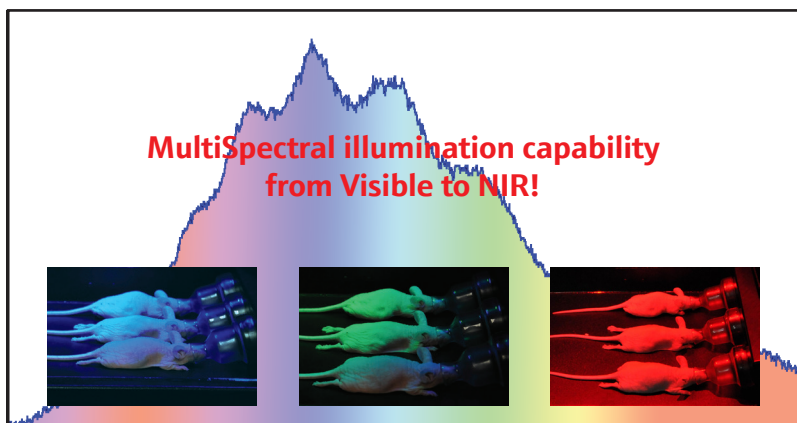
FP-173. Nude mice were seeded with RFP expressing cancer cells subcutaneously. UVC treatment (emission peak 254 nm) was given 48 hours later. The size of the fluorescent tumor was measured every five days to evaluate the efficacy of the treatment. The study showed that UVC irradiation of the MRC (minimal residual cancer) model inhibited subsequent tumor formation, without any obvious side effects. This study opens up the possibility of UVC treatment for MRC after surgical resection.

Color coded fluorescent imaging in mice

A mouse test model, expressing cyan fluorescent protein (CFP) in most tissues, was developed to enable multicolor imaging of normal and tumor tissue. The pancreas and reproductive organs showed the strongest blue fluorescence to use as background contrast to the red or green fluorescing tumor cells. For subsequent experiments using red fluorescent protein (RFP) and green fluorescent protein (GFP) labeled tumors, the tumors were readily tracked by multiplex imaging.

eLITE Light Source

The UVP iBox® Scientia includes a xenon light source to supply uniform and directed lighting to the animal. Easily install the eLITE guide through the darkroom access port. Matched excitation/emission GFP and RFP sets included.



Camera Options

BioCam 900

Back-illuminated, deeply cooled CCD, with superior quantum efficiency (>90%) and high signal-to-noise ratio, is optimized for ultra-fast capture in bioluminescent and fluorescent in vivo applications

OptiChemi 695

High sensitivity cooled CCD camera and optics are optimized for fluorescent in vivo applications

For information contact:

analytikjena

An Endress+Hauser Company

Analytik Jena US 2066 W. 11th Street, Upland, CA 91786
(909) 946-3197 | info@us.analytik-jena.com