Gain a greater understanding of disease and therapeutic efficacy using our wide range of in vivo imaging solutions. Researchers trust our in vivo imaging solutions to give them reliable, calibrated data that reveals pathway characterization and therapeutic efficacies for a broad range of indications. Our reagents, instruments, and applications support have helped hundreds of research projects over the years. And our hard-earned expertise makes us a trusted provider of pre-clinical imaging solutions—with thousands of peer-reviewed articles as proof.
**In vivo imaging solutions** start with our comprehensive portfolio of optical imaging reagents built around your applications.

- Bioluminescent Reagents »
- Fluorescent Reagents »
- Radioimaging Nuclides »
Obtain more information from your target with PerkinElmer’s wide range of bioluminescent reagents optimized on the IVIS® platform.

• Bioluminescent Substrates
• Bioluminescent Cancer Cell Lines
• Bioluminescent Bacteria
• Lentiviral Particles

Bioluminescent Reagents

Fluorescent Reagents »
Radioimaging Nuclides »
Our comprehensive suite of fluorescent in vivo imaging agents enables unmatched imaging of a broad range of disease-related biomarkers and pathways in your research models.

- Activatable Fluorescent Agents
- Targeted Fluorescent Agents
- Vascular Fluorescent Agents
- Fluorescent Labeling Dyes & Kits

Bioluminescent Reagents »
Fluorescent Reagents
Radioimaging Nuclides »
Do you have the right radionuclide for your research? We provide radionuclides for many imaging modalities, including PET, SPECT, and Cerenkov Light Imaging.

- Zirconium-89
- Yttrium-90
- Chromium-51
- Phosphorus-32
- Iodine-124
- Iodine-131

Bioluminescent Reagents »
Fluorescent Reagents »
Radioimaging Nuclides

89-Zirconium labelled peptide imaged using PET. Courtesy: Richard Tavare, UCLA
Gain greater understanding of disease and therapeutic efficacy using our wide range of in vivo imaging systems. Our systems are available in single- and multiple-imaging modalities.

Optical Imaging Systems  »
MicroCT Imaging Systems  »
With thousands of peer-reviewed publications, PerkinElmer’s optical imaging platform is the gold standard for imaging.

- IVIS Lumina Benchtop Series for 2D optical imaging with optional integrated X-ray
- IVIS Spectrum Series for 2D and 3D optical imaging with optional integrated microCT
- FMT® Series for 3D fluorescence tomography

**IN VIVO IMAGING SYSTEMS**

**Optical Imaging**

Bioware® Brite cell line 4T1-Red-FLuc (BW124087) knee metastasis model imaged using the IVIS Lumina X5
Low-dose, high-speed 3D X-ray imaging of anatomical and functional readouts—ideal for longitudinal imaging.

- Quantum GX2 high-resolution microCT system
- IVIS SpectrumCT optical system with integrated microCT

Heart, lung and vasculature imaged using the Quantum GX2 microCT
Analyze even the most complex imaging data with ease. Our software features intuitive workflows that streamline data analysis to expedite turnaround from acquisition to presentation.

• Living Image® designed for the IVIS platform
• TrueQuant® for streamlined analysis with the FMT platform
• AccuCT™ for advanced microCT analysis

Living Image Software  »
TrueQuant Software  »
AccuCT Imaging Software  »
Living Image advanced software designed for the IVIS platform simplifies even the most complex image acquisition and analysis of bioluminescent and fluorescent probes in vivo.

- Imaging Wizard to streamline acquisition setup
- Longitudinal imaging analysis tools
- Comprehensive set of tools for 2D or 3D data analysis
Designed for the FMT platform, TrueQuant software makes 3D fluorescence tomography easy with streamlined tools for data analysis.

- Advanced study management tools for streamlined acquisition
- Automated quantification
- Automated reconstruction with advanced algorithms
Perform bone morphology and BMD analysis in just a few clicks with AccuCT advanced microCT imaging software designed for the Quantum imaging system.

- Workflow-based software interface
- Automated bone segmentation
- User-friendly analysis, reducing variation between users
The more you know, the better research decisions you can make. With our expert application and service support, we ensure that you keep your instruments running and your research moving forward.

- Scientific expertise across a wide range of application areas
- Hands-on training through In Vivo University
- OneSource® Laboratory Service Support
Dr. Koblinski has had a long interest in the relationship between tumor cells and their specific microenvironments during the metastatic cascade, with a specific interest in the brain. Her research focuses on elucidating the role of syndecans, heparan sulfate proteoglycans, in facilitating breast cancer metastasis to the brain. With the IVIS Spectrum imaging system, Dr. Koblinski is able to track and quantify brain metastases in vivo and ex vivo, gaining insights into the mechanisms that facilitate breast cancer brain metastasis.
Dr. Ran’s research has been focused on developing probes for systemic molecular imaging of Alzheimer's disease. In the past years, Dr. Ran's group has invented curcumin-based fluorescence probe library, CRANAD-X, for imaging various amyloid beta ($\text{A} \beta$) species and oxidative stress ($\text{H}_2\text{O}_2$ and ROS). With the IVIS Spectrum imaging system, Dr. Ran’s group demonstrated that NIRF brain imaging with CRANAD-X could be used to detect soluble and insoluble $\text{A} \beta$s of AD mouse models. Recently his group showed that NIRF ocular imaging (NIRFOI) could detect and monitor $\text{A} \beta$s in the eyes of AD mice. NIRFOI has the potential for clinical applications in the future.
Dr. Müller’s research has been focused on developing probes for Positron Emission Tomography (PET) for use in a number of applications, including development and evaluation of folate-based radioconjugates and the imaging and therapy of cancer and inflammatory diseases. For Dr. Müller’s group, the G8 PET/CT has proven to be particularly effective for the evaluation of novel in-house produced radiotracers, which are initially only available in small quantities. The fact that the scanner is small and mobile has allowed her group to transport it to other facilities, enabling them to recently use the G8 PET/CT for imaging in vivo 11C production after proton irradiation of tumor xenografts in mice.

CASE STUDY:
PET Probe Development

Cristina Müller, PhD
Group Leader
Center for Radiopharmaceutical Sciences (ETH/PSI), Zurich, Switzerland

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All PET/CT images courtesy of Dr. Cristina Müller, Center for Radiopharmaceutical Sciences (ETH/PSI), Zurich, Switzerland, used with permission.

(a) $^{64}$Cu-NODAGA-folate static PET scan in C57 nude mice with cervical cancer xenografts
(b) $^{18}$F-Azafol static PET in C57 nude mice with cervical cancer xenografts
(c) $^{44}$Sc-labeled PSMA-617 static PET/CT scan of SCID mouse with LNCaP prostate cancer xenograft

T = Tumor
K = Kidney
B = Bladder

All PET/CT images courtesy of Dr. Cristina Müller, Center for Radiopharmaceutical Sciences (ETH/PSI), Zurich, Switzerland, used with permission.
Dr. Shackelford's research focuses on understanding key genetic, molecular, and metabolic events that drive lung tumor development and progression. His focus is on using complementary multimodality imaging approaches on genetically engineered mouse models (GEMMs) of lung cancer in order to functionally map key metabolic events that shape tumorigenesis. His approach combines 3D bioluminescent imaging using the IVIS Spectrum with positron emission tomography (PET) imaging using the G8 PET/CT scanner. By coupling the use of caged luciferins with 18F-labeled radiotracers, Dr. Shackelford has begun to non-invasively profile key metabolic events that dictate how lung tumors form and evolve from early to advanced stages of the disease.
FEATURED PRODUCTS

**Fluorescent Agents**
- AngioSense®
- TLectinSense™

**Luminescent Reagents**
- Bioware® Brite tumor Cell Lines
- RediFect™ Lentiviral Particles
- XenoLight® D-Luciferin K⁺ Salt

**Radioimaging Nuclides**
- Zirconium-89

**Instruments**
- IVIS® Imaging Platform
- FMT® Imaging Platform
FEATURED PRODUCTS

**Fluorescent Agents**
- MMPSense®
- Neutrophil Elastase FAST™
- ProSense®
- RediJect™ COX-2 probe

**Luminescent Reagents**
- XenoLight® RediJect Chemiluminescent Inflammation Probe

**Radioimaging Nuclides**
- Iodine-124
- Zirconium-89

**Instruments**
- IVIS® Imaging Platform
- FMT® Imaging Platform
FEATURED PRODUCTS

Fluorescent Agents
- RediJect Bacterial Detection Probe
- BacteriSense™

Luminescent Reagents
- Bacteria labeled with luciferase
  - *E. coli*
  - *P. aeruginosa*
  - *S. aureus*
  - *L. monocytogenes*

Instruments
- IVIS® Imaging Platform
- FMT® Imaging Platform
FEATURED PRODUCTS

Fluorescent Agents
- Neutrophil Elastase FAST™
- ProSense®
- MMPSense®

Luminescent Reagents
- Bioware® Brite Oncology Cell Lines Labeled with Luciferase
  - A549 Red-FLuc
  - NCI-H460 Red-FLuc
  - LL/2 Red-FLuc

Instruments
- IVIS® Imaging Platform
- Quantum GX2 microCT
FEATURERD PRODUCTS

Fluorescent Agents
- HypoxiSense™
- AngioSense®

Luminescent Reagents
- Bioware® Brite Oncology Cell Lines Labeled with Luciferase
  - HT-29-Red-FLuc
  - HeLa-Red-FLuc
- RediFect™ Lentiviral Particles
- XenoLight® D-Luciferin K⁺ Salt

Instruments
- IVIS® Imaging Platform
- FMT® Imaging Platform
FEATURED PRODUCTS

**Fluorescent Agents**
- ProSense®
- IntegriSense™

**Luminescent Reagents**
- Bioware® Brite Oncology Cell Lines Labeled with Luciferase
  - GL261 Red-FLuc
  - U87 MG-Red-FLuc
- RediFect™ Lentiviral Particles
- XenoLight® D-Luciferin K+ Salt

**Radioimaging Nuclides**
- Iodine-124
- Yttrium-90
- Zirconium-89

**Instruments**
- IVIS® Imaging Platform
- FMT® Imaging Platform
- Quantum GX2 microCT®

*May require contrast agent*