

Our team of highly qualified experts and our strong network of international partners give us the ability to detect and set trends in the market!



## Eckert & Ziegler Radiopharma

The Eckert & Ziegler Radiopharma segment is a business division of the Eckert & Ziegler group, with headquarters in Berlin, Germany.

We deliver versatile, fully automated and GMP compliant synthesis equipment for the development and production of radiopharmaceuticals corresponding to your individual needs.

## Various Applications for Various Needs

**Modular-Lab Standard** customizable syntheses according to specific need, e.g.  $^{18}\text{F}$ -FEC,  $^{18}\text{F}$ -FDG,  $^{18}\text{F}$ -FET,  $^{18}\text{F}$ -Flumazenil,  $^{18}\text{F}$ -MISO,  $^{11}\text{C}$ -Choline,  $^{11}\text{C}$ -Methyl iodide,  $^{131}\text{I}$ -MIBG,  $^{68}\text{Ga}$ -DOTA-TATE/TOC,  $^{64}\text{Cu}$  applications and more

**PharmTracer**  $^{68}\text{Ga}$ -DOTA-TATE/TOC,  $^{68}\text{Ga}$ -PSMA-11,  $^{111}\text{In}$ -DOTA-TATE/TOC,  $^{177}\text{Lu}$ -DOTA-TATE/TOC,  $^{90}\text{Y}$ -DOTA-TATE/TOC,  $^{177}\text{Lu}$ -PSMA-617,  $^{18}\text{F}$ -FLT,  $^{18}\text{F}$ -FES,

$^{18}\text{F}$ -FDG,  $^{18}\text{F}$ -FMISO,  $^{18}\text{F}$ -NaF,  $^{18}\text{F}$ -FET,  $^{18}\text{F}$ -PSMA-1007,  $^{64}\text{Cu}$ -ATSM,  $^{11}\text{C}$ -Methyl iodide,  $^{11}\text{C}$ -Methyltriflate,  $^{11}\text{C}$ -Acetate,  $^{11}\text{C}$ -Choline,  $^{11}\text{C}$ -Methionine

**Modular-Lab easy**  $^{68}\text{Ga}$ -DOTA-TATE/TOC,  $^{68}\text{Ga}$ -PSMA-11,  $^{68}\text{Ga}$ -DOTA-PSMA,  $^{90}\text{Y}$ -DOTA-TATE/TOC,  $^{90}\text{Y}$ -DOTA-PSMA,  $^{177}\text{Lu}$ -DOTA-TATE/TOC,  $^{177}\text{Lu}$ -DOTA-PSMA

**KitLab**  $^{68}\text{Ga}$ -PSMA-11  
Further tracers and applications under development

## Eckert & Ziegler Radiopharma

### Our Promise

Reliable products  
Innovative and compliant solutions  
Quality and passion driven services

### Our Products and Services

Radiosynthesis devices and consumables  
Quality control equipment  
 $^{68}\text{Ge}$  /  $^{68}\text{Ga}$  Generators  
Longer lived radioisotopes for pharmaceutical applications  
Hands-on Workshops  
User Meetings and Trainings on all our devices  
Custom tailored applications (e.g. automatization of manual processes)



Radiosynthesis Technology



Radiochromatography



Radionuclides



Generators

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### Eckert & Ziegler Radiopharma Segment

Robert-Rössle-Strasse 10  
13125 Berlin  
Germany  
Phone: +49 30 941084 197  
Fax: +49 30 941084 470

info.radiopharma@ezag.de  
www.radiopharma.com

### Your contact in USA & Canada: Eckert & Ziegler Radiopharma, Inc.

63 South Street, Suite #110  
Hopkinton MA 01748  
USA  
Phone: +1 508 497 0060  
Fax: +1 508 497 0061

info.radiopharma@ezag.de  
www.radiopharma.com



## Eckert & Ziegler Radiopharma

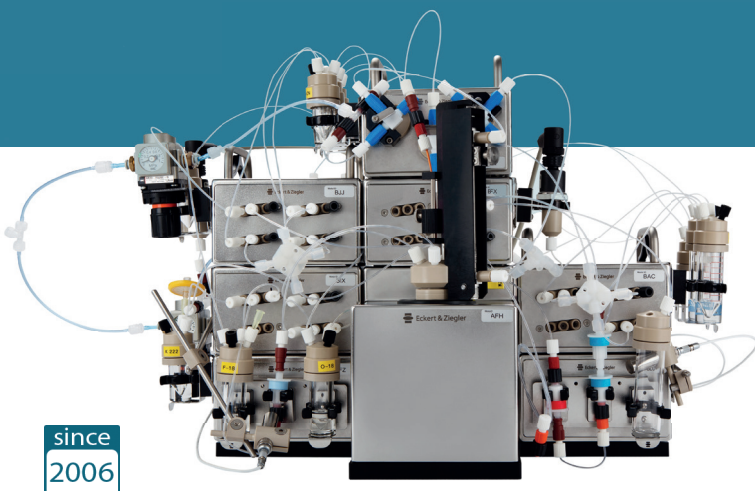
## Radiosynthesis Technology



## Research & Development

### Modular-Lab Standard

Tubing based system | custom syntheses for novel tracers | maximum flexibility | disposable items such as valves, tubing, cartridges commercially available



since  
2006

### Versatile Equipment for Research

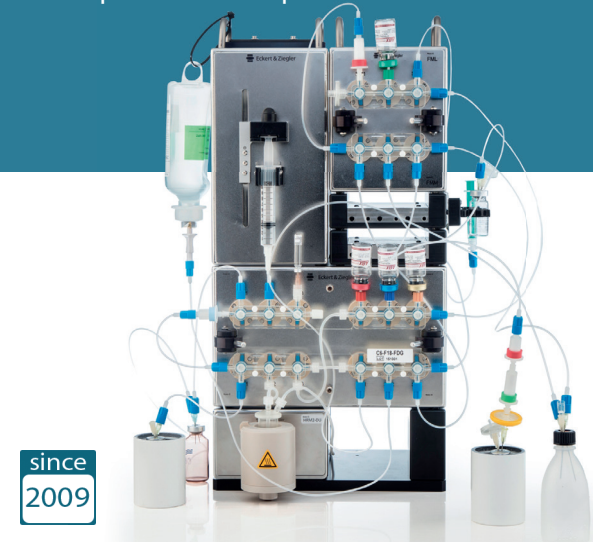
The synthesis program, tubing and other components can easily be generated and modified by the user; thus making the device very suitable for customized synthesis.

#### Unique modular approach

Choose from a large variety of valve modules, modules for heating & cooling, gas flow control, modules for reaction in gas phase, compact semipreparative HPLC module, analytical HPLC and many others with the flexibility to configure syntheses for novel tracers. Laptop included in delivery.

### Modular-Lab PharmTracer

Cassette based system | ideal for later stage clinical syntheses or routine production | research & development of radiopharmaceuticals



since  
2009

### Multi-Tracer Production

Extremely versatile system with a wide range of possible applications on one set-up. Production of a large variety of tracers.

#### Configuration for <sup>18</sup>F-Tracers

Electrical cabinet (EC); cassette modules SLM-2 and SLM-4; Heater Reactor Module HRM; Syringe Module SYM; Vacuum Pump; laptop; Modular-Lab software; starter pack cassettes.

## Routine Production

### Modular-Lab eazy

Smallest cassette based synthesizer on the market | easy operation and short synthesis time | high yield and high radiochemical purity



since  
2013

### Minimum Space. Maximum Efficiency.

The Modular-Lab eazy is available with the **Multi Generator Elution Tool** to produce multi-dose or various high activity single doses in only one production process with highest efficiency.

#### Included in standard delivery

Modular-Lab eazy synthesizer; electrical cabinet (EC); peristaltic pump; cassettes; laptop; Modular-Lab software; starter pack cassettes.

### KitLab\*

Fully automated, stand-alone device | cost efficient | fast user set up | no PC or EC needed | pre-elution function | calculation of remaining generator activity | RFID technology



since  
2018

### Kit Labeling Solution

Designed to offer an automated solution to improve reproducibility of results and to protect users of unnecessary exposure in accordance with ALARA guidelines when labeling cold kits.

#### Included in standard delivery

KitLab device; activity shielding containers according to application; starter pack cassettes incl. RFID cards.

\* patent pending

## Cassettes, Accessories & Software

### Single-use cassettes

Assembled under GMP compliant clean room conditions | sterilized with gamma radiation (validated process) | shelf-life of 18 months | avoiding cross-contamination



### Accessories

Starter units of 10 pieces sterile cassettes are included in delivery. With an individual barcode labeled cassettes (ML eazy) ensure compatibility of cassette and synthesis project. Modular-Lab eazy and KitLab come with color coded spikes and vials to simplify handling.

Multiple optional items such as barcode reader, Multi Generator Elution Tool, pre-elution cassette, printer, shielding container and more are available upon request.

### Modular-Lab software

Intuitive graphical user interface | drag & drop of symbols | compliant with GMP, cGAMP, GAMP 5 and CFR part 11 regulations



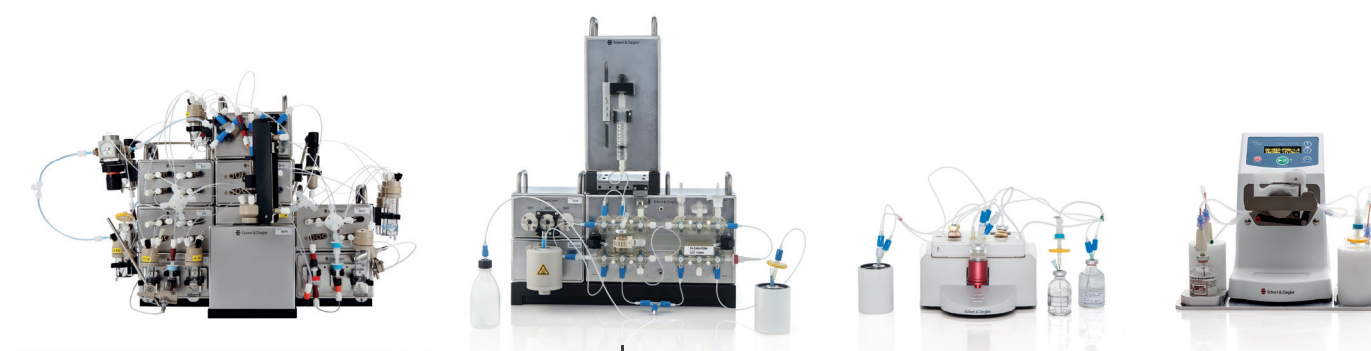
### Modular-Lab Software

Use pre-validated templates or generate your own synthesis project. Four defined security levels meet all demands to safely process data and the application-specific setup.

Laptop, Windows, Modular-Lab software and programs for syntheses, elution of generator and pressure test of cassette and sterile product filter (if applicable) are included in the standard delivery.

	Modular-Lab Standard	Modular-Lab PharmTracer	Modular-Lab eazy	KitLab
<b>Nuclide focus</b>	novel tracers (research), <sup>11</sup> C, <sup>64</sup> Cu, <sup>18</sup> F, <sup>68</sup> Ga, <sup>131</sup> I & more	theranostic tracers ( <sup>68</sup> Ga, <sup>177</sup> Lu, <sup>90</sup> Y) and novel tracers <sup>11</sup> C, <sup>64</sup> Cu, <sup>18</sup> F, <sup>111</sup> In	theranostic tracers ( <sup>68</sup> Ga, <sup>177</sup> Lu, <sup>90</sup> Y)	<sup>68</sup> Ga
<b>Upgradable set-up</b>	✓	✓		✓
<b>Footprint</b>	depends on set-up for specific synthesis	280 x 268 x 515 mm (L x W x H) (set-up for <sup>18</sup> F-tracer)	201 x 227 x 105 mm (L x W x H)	340 x 280 x 270 mm (L x W x H)

### Synthesizer size comparison



Basic Modular-Lab PharmTracer configuration

### Our synthesizers in comparison

	Modular-Lab Standard	Modular-Lab PharmTracer	Modular-Lab eazy	KitLab
<b>Batch report</b>	extensive protocol, available as PDF	extensive protocol, available as PDF	extensive protocol, available as PDF	stored on RFID & SD card, printable with label printer
<b>Software</b>	open, programmable	open or closed	closed	integrated software
<b>Cassette test</b>	n.a.	✓ (pressurized air)	in-house	n.a.
<b>Filter integrity test</b>	✓ (pressurized air)	✓ (pressurized air)	✓ Filter Test Module	n.a.
<b>Liquid transfer</b>	by gas pressure or syringe pump	by syringe module	by integrated pump	by peristaltic pump