Synthra Various Radiosynthesizer
Product Description and Technical Specifications

Synthra MChelateplus (Catalog No. 013p)

Synthra MChelateplus is a flexible and completely automated radio synthesis system for routine production of a wide variety of Metal- ([^{64}Cu], [^{89}Zr], [^{44}Sc], [^{68}Ga], [^{86}Y], [^{177}Lu]) labeled compounds e.g. M-PSMA-, M-DOTA-, M-NOTA-, M-TE2A-, M-TETA-, M-ATSM-, M-PTSM-based radiotracers. Automating the synthesis is simple, with the easy-to-use configuration software SynthraView. The Synthra MChelateplus module offers both fully automatic and manual modes of operation.

Labeling Possibility Examples

Peptide application: DOTATOC or **DOTATATE** can be labeled by heating 50 nmol of peptide at pH 3.5 – 4.2 for 5 min at 95 °C. For purification, the reaction mixture is passed over a C-18 cartridge to avoid any potential metal breakthrough.

- **[^{68}Ga] Labeling:** The automated synthesis takes about 20 minutes with a possible decay-corrected yield of about 50 %.
- **[^{177}Lu] Labeling:** The automated synthesis takes about 15 minutes with a possible decay-corrected yield of > 70 %.

[^{89}Zr] solution application: Monoclonal antibodies (mAbs) conjugated with DFO can be labeled fully automated at room temperature in 60 min. The reaction mixture can be purified and desalted using a PD-10 SEC column. The automated synthesis takes about 80 minutes with possible isolated yield of > 70 %.

General Features

✓ **Heating and cooling capabilities**

- One heating zone with cooling capabilities
- Temperature range: -50 °C – 200 °C

✓ **Detectors and controllers**

- Four shielded radiation detectors
- Two pressure sensors

✓ **Built-in preparative radio/UV-HPLC system**, fixed wavelength LED detector with 255 nm or 280 nm, HPLC column and solid phase extraction (SPE)

✓ **Self-Cleaning System**

✓ **Liquid nitrogen trap** for radioactive volatiles and to protect built-in vacuum pump

✓ **Build-in vacuum pump(< 250 mbar)**

✓ **Dispensers and valves**

- HR-dispenser (up to 50.000 steps, 2.5/5 mL) depending on the intended isotope
- HPLC pneumatic injection valve (3 mL sample loop)
- Three spare valves for customization
- Chemically inert valves with small dead volume < 35 µL, 5 bar rated

✓ **Dimensions** (w x d x h): 42 × 50 × 48 cm

✓ **Weight**: approx. 30 kg

Synthesis Features

✓ **Eight reagent vials**

- Six small (1 – 3 mL) and two large (10 – 15 mL) volume glass vials for reagents

✓ **Three cartridge holders** for in-process purification

✓ **SPE unit** for final product formulation

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Additional Synthesis options

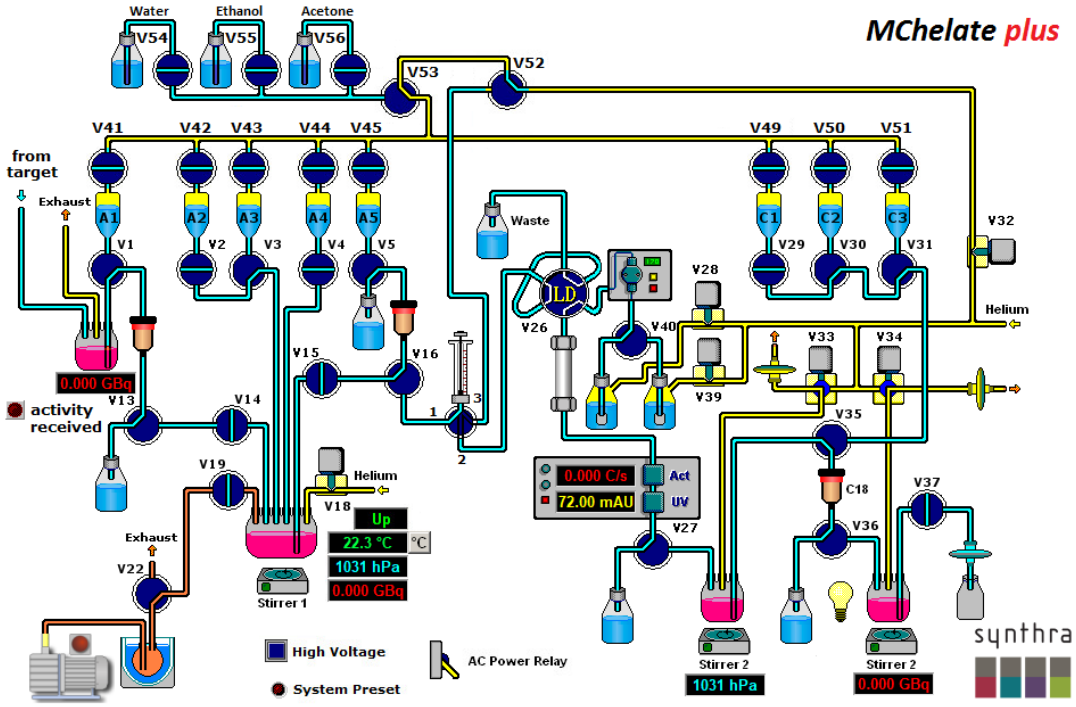
- ➔ **Product solvent evaporator** (Catalog No. 000pse)
- ➔ **[^{18}F] option** with [^{18}O]water recovery system (Catalog No. 013f)
- ➔ **Variable wavelength UV detector** (Catalog No. 000vuv)
- ➔ **Quaternary gradient pump** (Catalog No. 000qgp)

GMP Features

- ✓ Synthesis files for various tracers
- ✓ **GMP compliant.** Electronic control and data collection (27/18 channels)
- ✓ **21CFRpart11** & **LIMS** compatible

Terminal Control

- ✓ A laptop (Win 10 Pro) with preinstalled controlling software SynthraView is included
- ✓ Four digital inputs for communication with external devices upon request



Example of the Graphical User Interface (GUI) of the SynthraView software with the additional [^{18}F] option.

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