Synthra MeI (MeOTf) (Catalog No. 005)

Synthra MeI is a flexible and completely automated radiosynthesizer for the efficient production of [^{11}C]methyl iodide and [^{11}C]methyl triflate. Automating the synthesis is simple with the easy-to-use configuration software SynthraView. The Synthra MeI module offers both, fully automatic and manual modes of operation.

Gas Phase Capabilities

- ✓ High specific activities are achieved from in-target produced [^{11}C]CO_2 ranging from 5 Ci/µmol to 20 Ci/µmol (Higher specific activities are possible when using methane target).

The [^{11}C]CO_2 produced in target is quantitatively trapped in the stainless steel capillary tubing at -180 °C. Subsequently, the CO_2 is released into the methane oven where it is converted to [^{11}C]CH_4 by reduction on a Ni-catalyst. The [^{11}C]CH_4 is trapped at -120 °C on Carboxen®. In a successive gas phase reaction the iodination of [^{11}C]CH_4 to [^{11}C]MeI is carried out in a gas phase recirculation system with gaseous I_2 at 730 °C. During circulation [^{11}C]MeI ac-cumulates on a Porapak™ column. Finally, it is released at 200°C and ready for any kind of labeling reaction.

[^{11}C]Labeling Possibilities

- ✓ **[^{11}C]Methyl iodide production**: [^{11}C]MeI is ready for release 7 minutes after trapping the [^{11}C]CO_2. The yield for the [^{11}C]methyl iodide formation is under good conditions above 50 % non-decay corrected. (ndc).
  - Up to 10 sequential methyl iodide preparations are possible from a single box set-up.
- ✓ **Methyl triflate production**: The [^{11}C]MeI can be converted to [^{11}C]MeOTf by passing through a silver triflate filled column at 180 °C. The conversion yield from methyl iodide is 95 %.

Additional Gas Phase Options

- ➔ **Methane option:** A reduced gas phase suitable for the use of CH_4 target
- ➔ **[^{11}C]HCN** (Catalog No. 003hcn): The [^{11}C]CH_4 is released with NH_3 gas into a high temperature area where it undergoes a Pt-catalyzed conversion into [^{11}C]HCN at 950 °C.

General Features

- ✓ **Heating and cooling capabilities**
  - Seven heating zones
  - Four with cooling capabilities
  - Temperature range: -196 °C – 950 °C
- ✓ **Detectors and controllers**
  - Three shielded radiation detectors
  - Three electronic flow controllers (HCN option: Four flow controllers)
  - One pressure sensor as leak detector
- ✓ **Chemically inert valves** with small dead volume < 35 µL, 5 bar rated
- ✓ **Size** (w x d x h): 30 × 50 × 48 cm
- ✓ **Weight**: approx. 20 kg

Synthesis Features

- ✓ **Triflate/column oven** (RT – 200 °C)

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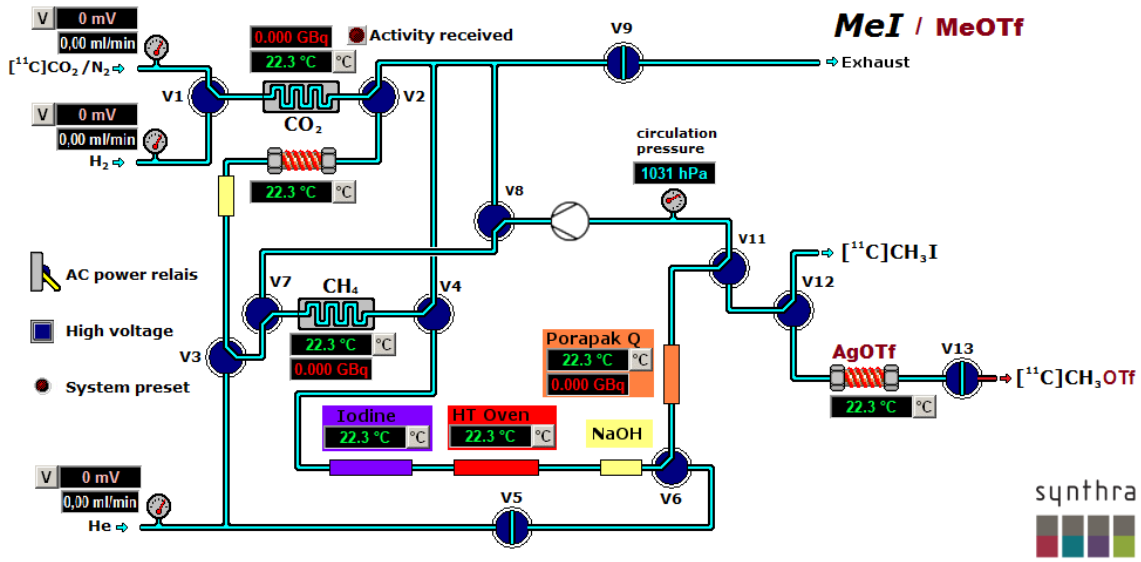
GMP Features

- ✓ Synthesis files for [^{11}C]MeI and [^{11}C]MeOTf
- ✓ **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



The Graphical User Interface (GUI) of the SynthraView software.

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