Synthra C-11 Family

Product Description and Technical Specifications

Synthra Methionine/Choline (Catalog No. 007)

Synthra Methionine/Choline is a completely automated radiosynthesizer for the efficient production of [^{11}C]labeled compounds like [^{11}C]Methionine and [^{11}C]Choline. Automating the synthesis is simple with the easy-to-use configuration software SynthraView. The Synthra Methionine/Choline module offers both, fully automatic as well as manual modes of operation.

Gas Phase Capabilities

✓ High specific activities are achieved from in-target produced [^{11}C]CO_2 ranging from 10 Ci/µmol to 24 Ci/µmol.*

The target [^{11}C]CO_2 is quantitatively trapped in the stainless steel capillary tubing at -180 °C. After washing out any impurities the CO_2 is released into the methane oven where it is converted to [^{11}C]CH_4 by reduction on a Ni catalyst. Subsequently, the [^{11}C]methane is released and trapped at -120 °C on a Carboxen® CH_4 trap and unreacted hydrogen is removed from the system. In a successive gas phase reaction the [^{11}C]CH_4 is converted into [^{11}C]MeI and trapped on a Porapak Q filled column.

[^{11}C]Labeling Possibilities

✓ **[^{11}C]Methyl iodide Production**: [^{11}C]MeI is ready to be released after 7 minutes starting from the [^{11}C]CO_2 trapping. The yield for the [^{11}C]MeI formation is better than 50% (ndc).

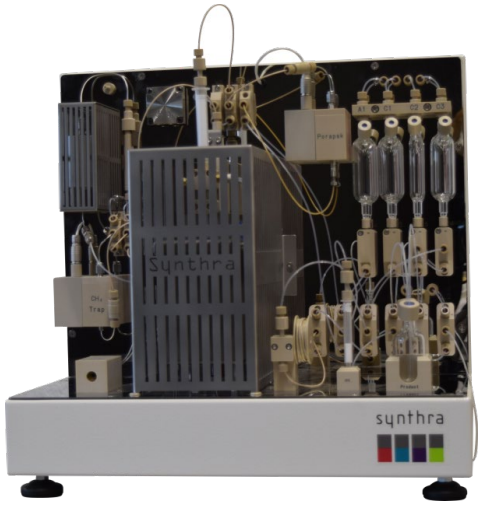
- Up to **10** sequential methyl iodide preparations are possible from a single box set-up.
- The [^{11}C]methyl iodide can be used to synthesize [^{11}C]choline by captive chemistry in a loop or for the [^{11}C]Methionine synthesis by solid support heterogeneous reactions on a cartridge.

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.

*Higher specific activities are possible when using methane target.



General Features

✓ **Heating and Cooling Capabilities**
- 6 heating zones
- 3 with cooling capabilities
- Temperature range: -196 °C – 1000 °C

✓ **Detectors and Controllers**
- 4 shielded radiation detectors
- 3 electronic flow controllers (HCN option: 4 flow controller)
- 1 Pressure sensors as leak detector + 1 filter test unit

✓ **Dispensers and Valves**
- HR-dispenser (up to 50.000 steps, 2.5/5 mL)
- Chemically inert valves with small dead volume < 35 µL, 5 bar rated

Synthesis Features

✓ **4 reagent vials**
- One small (1 – 3 mL) and three large (10 - 15 mL) volume glass vials for reagents

✓ **1 additional Cartridge holders**

✓ **SPE Unit** for final product formulation

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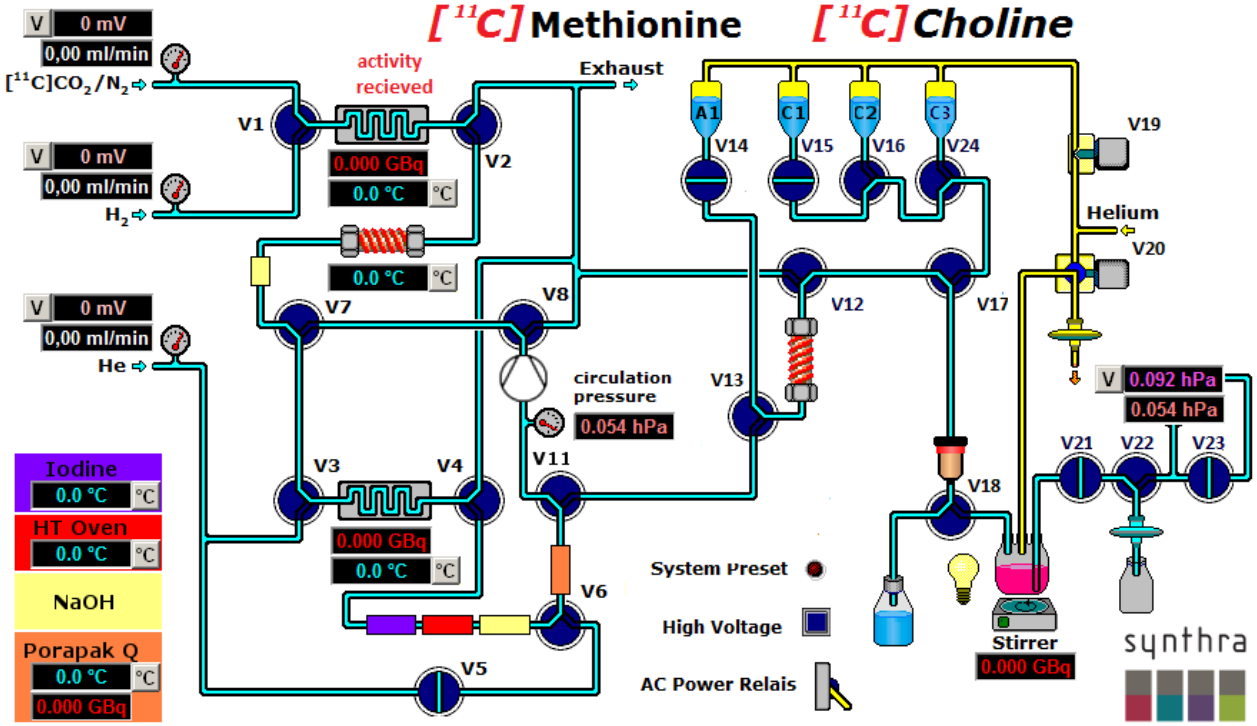
- ✓ **Synthesis Options:**
  - ➔ Triflate/Column oven (RT – 200 °C)
  - ➔ Product Vial Heater Option (Catalog No. 000ph)

GMP Features

- ✓ Synthesis files for at least 2 [^{11}C]radiotracers
- ✓ **GMP compliant**. Electronic control and data collection (27/18 channels)
- ✓ **21CFRpart11** & **LIMS** compatible

Terminal Control

- ✓ **A Laptop (Win 10 Pro) and SynthraView are included**



The Graphical User Interface (GUI) of the SynthraView software

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