

# Synthesis Business Unit



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Our Synthesis Business Unit offers C-14, C-13 or H-3 labelling services for organic compounds widely used in metabolism (ADME) or e-fate studies during agrochemical studies or pharmaceutical research.

We provide a wide selection of labelled pesticides, herbicides, fungicides and other bioactive compounds that play a significant role in the registration of agrochemicals.

Our GMP Laboratory also enables us to provide key labelled compounds for clinical research serving the Pharma Industry.

Given our solid experience in radiosynthesis our partners also trust us to develop unique methods and perform complex and challenging custom synthesis tasks.

<sup>14</sup>C

<sup>3</sup>H

<sup>13</sup>C



Radiolabelling  
expertise



Committed to  
quality and safety



Custom tailored  
solutions



GMP



World wide delivery

# Products

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## ⇒ <sup>14</sup>C labelled materials for agrochemical research and registration

Our dedicated and experienced team, delivering excellence in chemistry, supports the global agribusiness industry by providing radiolabelled test items for various purposes. <sup>14</sup>C radiolabelled compounds are the essential tool whether you are in the development phase for a new active ingredient, or conducting regulatory studies (environmental fate and behaviour, metabolism, residue, eco-toxicological etc.).

We are uniquely specialised in <sup>14</sup>C labelled agrochemicals, the detailed list of our catalogue products is available at our website.

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## ⇒ <sup>14</sup>C labelled materials for veterinary or pharmacological research and registration

<sup>14</sup>C radiolabelled compounds are necessary tools in ADME studies during clinical, preclinical phase and in discovery investigations. We offer our radiosynthesis expertise providing key active ingredients with specific labelling positions.

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## ⇒ <sup>3</sup>H for applications in life sciences

Hydrogen isotope labelling allows for the traceless and direct incorporation of an additional mass and radioactive label into an organic molecule with almost no changes in its chemical structure, physical properties, or biological activity. Tritium (<sup>3</sup>H), in particular is widely used, especially in pharmaceutical drug discovery.

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## ⇒ <sup>13</sup>C for - stable isotopic-labelled compounds for the agrochemical and food industry

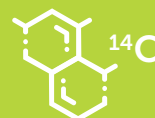
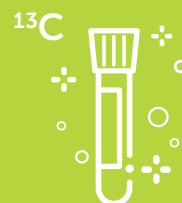
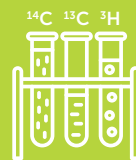
Labelling with <sup>13</sup>C results in a stable, non-radioactive molecule with higher molecular mass. Required analytical equipment for <sup>13</sup>C labelled compound is a mass spectrometer. Since the synthetic protocols for <sup>13</sup>C and <sup>14</sup>C labelled compounds are similar we can utilize our extensive knowledge on radiosynthesis while offering stable isotopic labelled compounds for our customers convenience.

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## ⇒ Other labelled compounds

Beside our catalogue products we are looking forward to unique requests to support our customers.

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# Services

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## ⇒ Custom synthesis

We develop and test new synthetic routes to provide unique radiolabelled compounds with specific labelling positions. Utilizing our know-how in radiosynthesis we offer customised solutions to your requirements.

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## ⇒ Analysis

With over 25 years of radioisotope analytical experience, we can provide full analysis to verify the radiolabelled molecule and measure (radio)chemical purity. Utilizing qualified analytical instruments, we ensure the reliability of analytical data:

- ▶ Liquid scintillation counters
  - ▶ Flow through detection: radio and UV
  - ▶ HPLC: analytical, semi-prep and preparative
  - ▶ TLC and radio TLC detection
  - ▶ LC-MS analysis
  - ▶ NMR analysis (with external partners)
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## ⇒ (Re)Purification

We provide purification services of radioisotope- and stable isotope-labelled compounds. By applying purification methods, such as flash column chromatography, preparative high-performance liquid chromatography (HPLC), and recrystallization in order to obtain the requested purity.

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## ⇒ Delivery

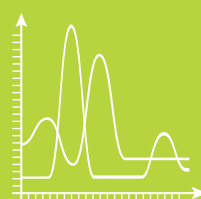
Utilizing our strategic position being connected to the main international network hubs, with over 30 years of experience, a IATA trained logistic staff and international partner network we can arrange door-to-door delivery around the globe.

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## ⇒ Long-term storage and data management

On long-term base we can provide comprehensive service including synthesis, re-purification, and long-term storage of radiolabelled compounds.

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# Labelled with care

Whether you need radiolabelled compounds for use in metabolism studies, for environmental fate studies, or to support your R&D or research program, our company offers customized solutions to your requirements.

You might find the requested compound among our catalogue products, or contact us for a custom synthesis project.

There are a number of important factors to consider when ordering labelled compounds. In case you would like to receive a customised price quotation please contact our Sales Team with the following relevant parameters included:

- ⇒ correct chemical or common name of the compounds (in case of more complicated molecules together with the formula);
- ⇒ labelling isotope (C-14, H-3) and position of labelling;
- ⇒ required molar or specific activity;
- ⇒ required quantity, activity (MBq or mCi);
- ⇒ required form (net material or a solution – in the latter case the requested solvent and radiochemical concentration; requested packsize);
- ⇒ requested lead time

To quote C-13 labelled stable compounds please, specify the name of the compound, labelling position, enrichment %, chemical purity, quantity (mg, g).

For more information please visit: [www.izotop.hu/synthesis](http://www.izotop.hu/synthesis)





In addition to our products, we are looking forward to new possibilities to widen our portfolio and meet our growing customer demands. If you are looking for an experienced and licenced distributor do not hesitate to contact our Sales Team.

**INSTITUTE OF ISOTOPES CO. LTD.**

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