Tritium Labelled Peptide Service

Quotient Bio research has partnered with Cambridge Research Biochemicals (CRB) to supply both inactive and radioactive peptides to a high quality with reliable delivery in a single shipment.

With nearly 30 years of experience of providing high quality bespoke peptides CRB is one of the most established and experienced custom manufacturers of peptides in the world.

Combining this with more than 60 years of radiolabelling expertise in the Quotient Bio research team creates a unique service for the synthesis of both inactive and radioactive peptides.

**Peptide Tritiation Method**

Peptides which have been site-specifically labelled with tritium are the ideal choice for use in receptor studies. Tritium labelling does not change the chemical structure of the peptide, giving ligands with chemical and biological properties identical to those of the unlabelled molecule.

The conventional route to tritium labelled peptides involves the catalytic hydrogenation or hydrogenolysis of a peptide analogue containing an unsaturated or iodinated precursor amino acid derivative as shown in the figures overleaf.
Disadvantages:

- Limited to few amino acids
- Synthesis and characterisation of starting material required
- High specific activity using dehydroleucine
- Reproducibility of method
- Labelled positions reasonably well defined
- No change in chemical structure, biological activity should be maintained
- Speed if starting material available

Advantages:

- Flexible, science driven approach ensures the highest quality service to support
  your business objectives
- Tailored solutions, delivered through state-of-the-art technologies and
  underpinned by unparalleled medical, chemical and biological expertise.
- Our adaptive early stage and specialist drug development services provide you
  with tailored solutions, delivered through state-of-the-art technologies and
  underpinned by unparalleled medical, chemical and biological expertise. Our
  flexible, science driven approach ensures the highest quality service to support
  and accelerate the development of your pioneering medicines and products.

Radioactive and Inactive Peptides Supply

Quotient Bioresearch and CRB will work together to supply both inactive and
radioactive peptides to a high quality with reliable delivery in a single shipment.

- Convenient seamless service; one contract, one order,
- Easier shipping logistics with hot and cold peptide shipped by Quotient
- Joint consultancy for difficult syntheses

Peptides and proteins can also be labelled by “tagging” with a group such as $^3$H NSP, although this does change the native structure of the molecule and so the assay should be validated using the tagged peptide.

Frequently Labelled Amino Acids

**Tritium/halogen exchange**

**PHENYL ALANINE** 20-30 Ci/mmol

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\text{PROLINE} \quad \text{20-60 Ci/mmol}
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\text{LEUCINE} \quad \text{100-160 Ci/mmol}
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**Tritium reduction of alkene**

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\text{TYROSINE} \quad \text{40-60 Ci/mmol}
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Please contact us for further information on either tritium or carbon-14 labelled amino acids & peptides radiolabelling@quotientbioresearch.com

www.crbdiscovery.com/services/peptide-synthesis/

www.quotientbioresearch.com

About Quotient Bioresearch:

Quotient Bioresearch is a leading provider of early stage and specialist drug development services to pharmaceutical, biotechnology and medical device clients worldwide.

Our adaptive early stage and specialist drug development services provide you with tailored solutions, delivered through state-of-the-art technologies and underpinned by unparalleled medical, chemical and biological expertise. Our flexible, science driven approach ensures the highest quality service to support and accelerate the development of your pioneering medicines and products.

Our extensive range of capabilities span Chemistry and Metabolism, Bioanalytical Sciences, and Clinical Sciences provided independently or integrated into tailored work programmes. These are driven by our scientific expertise and delivered using flexible platforms including:

- $^14$C Enabled Drug Development using our unique Synthesis-to-Clinic™
  platform
- Phase I clinical studies using our Translational Pharmaceutics™ platform.

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