apexmolecular

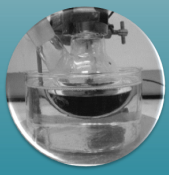
Chemistry Synthesis Services

We are a leading provider of specialist chemistry services to the pharmaceutical, biotechnology and applied chemistry sectors. Our flexibility and intelligent approach to project design, combined with the expertise we bring to every project makes us a partner of choice in the industry.

Apex Molecular provides a range of services to meet our customers' requirements, ranging from short custom synthesis to long term, multi-FTE projects. We understand the importance of high quality and timely communication throughout a project, and how to execute a project flawlessly. Apex Molecular has complete focus on ensuring that our clients' project portfolios are managed with minimum

Milligrams

- Parallel reactors
- Targeted Libraries
- Toxins-Linkers



Grams

- Preclinical test samples
- Building blocks, toxins, APIs
- Rapid scale up

Kilograms

- Niche manufacture
- Advanced intermediates
- Process development

Discovery

Research & Development

apexmolecular

Chemistry Synthesis

Our modern laboratory facilities are highly serviced and flexible enabling us to meet our customers' needs across the pre-clinical early development phases

We can operate across the lab scale from mL to 20 L, and synthesise mg to small Kgs of target compounds. We are equipped to carry out most modern chemistries and microwave chemistry.

Facilities

- >30 Fumehoods
- Dedicated High Potency Facility with isolator
- 6 & 12 stage Radelys carousels
- Jacketed vessels (up to 20 L)
- Pressure hydrogenation (1 L)
- Automated microwave synthesiser
- **Purification**—prep HPLC, FlashMaster®, PuriFlash®, Freeze dryer
- **Characterisation** - UPLC, LCMS, 500 MHz NMR

Capabilities (recent examples)

- APIs, HPAPIs
- Asymmetric Synthesis
- Biocatalysis
- Controlled substances (Home Office Licence)
- Crosslinkers
- Cytotoxins
- Fluorescent probes
- Heterocyclic chemistry
- Metal catalysed cross coupling
- Nucleosides

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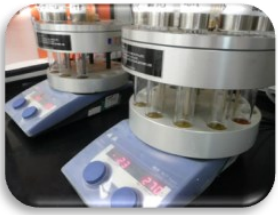
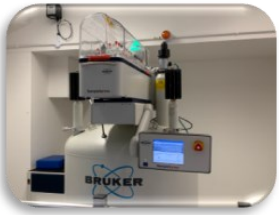
Medicinal Chemistry Services

Apex Molecular provides medicinal chemistry services to support drug discovery research programs. We offer both complete chemistry services, or work to complement our customers' current chemistry capabilities.

We Offer

We are experienced in working across the pre-clinical drug discovery phase. From lead discovery to lead development and optimisation, and including non-GLP in-vivo toxicology studies. We provide the chemistry support to ensure material requirements for quality and quantity are met at every stage.





Parallel Synthesis

Automated Purification

Automated Analysis

Pre-Clinical Drug Discovery Services

- The capability to work on scales ranging from milligrams to hundreds of grams supporting all stages of the pre-clinical drug discovery program from hit identification to toxicology studies.
- Design and synthesis of compound libraries to support lead development and lead optimisation programs based on SAR and chemical feasibility.
- Design and synthesis of building blocks and cores.
- Route optimisation of candidate compounds to enable the efficient synthesis of larger quantities of material for further testing.

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Chemistry Synthesis Services

From our high quality UK facility our experienced team of research chemists are ready to deliver on the most challenging synthesis projects for our pharma and biotech customers.

With vast experience delivering:

- Building blocks, scaffolds, cores, tool compounds, drug fragments and controlled substances.
- Synthesis of targeted libraries
- Reference standards, metabolites, cold labelled APIs
- We can provide full R&D analytical services for in-process and final active compounds with LCMS NMR

Please contact us to learn more about our products and services

and to discuss your specific chemistry requirements

Our Chemistry Expertise has been applied to:

- Complex multistep organic synthesis, *e.g.* heterocycles, nucleosides, chiral compounds, cytotoxins
- Synthesis of milligram quantities of targets compounds for screening
- Rapid scale up synthesis from millligrams to multigram quantities
- Synthesis of building blocks and intermediates to support medicinal chemistry projects
- Synthesis of standards and identification of process impurities
- Synthesis of fluorescent probes, labelled compounds, ligands etc

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High Potency Chemistry Products & Services

Apex Molecular is a leading UK Chemistry CRO providing specialist chemistry services, including the synthesis of high potency (HP) compounds such as cytotoxins, steroids, hormones and opioids.

With a specialist HP facility and experienced chemistry team, we are equipped to deliver the bespoke development and synthesis of the most challenging HP small molecules. We have particular experience in the synthesis of cytotoxins and toxin-linkers for the development of Antibody Drug Conjugates (ADCs).

Our specialist high potency facilities include:

- Clean room with four glove isolator independently tested and operates at OEL < 1ng.m^3 as an 8 hour time weighted average (TWA) allowing containment of the most potent HPAPIs
- Separate wet chemistry lab dedicated to high potency synthesis
- Air handling system that operates under negative pressure cascade
- Detailed safety protocols, standard operating procedures and full risk assessments carried out for all projects
- Staff fully trained in HPAPI protocols

High Potency Chemistry Products & Services

High Potency Chemistry Services

- Expertise in the synthesis of highly potent small molecules down to OEL < 1ng.m^3
- Tailor-made synthesis of novel toxin warheads and payloads
- From milligrams to multigram scale synthesis
- Development & scale up synthesis
- Experienced chemistry team (PhD qualified)
- Automated CombiFlash puriification

Safety categories 1-4 (R&D) **Highly Active Potent Containment**

Toxin & Linker Products

- Cleavable linkers (*e.g.* Boc-Val-Ala-PAB, Fmoc-Val-Cit-PAB-PNP)
- Multiple toxin classes (*e.g.* PBDs —Tomaymycin DM, Duocarmycins — TM, MB, DM, AM & intermediates — *seco*-CBI core)
- Product list continually expanding
- Available to purchase on mg and multigram scale

Please contact us to learn more about our products and services and to discuss your specific chemistry requirements

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Development & Scale Up Services

As projects progress along the development pipeline the quantities of material required for testing can change quickly. Often the initial synthesis of the target of interest was only executed on small milligrams scale and rapid scale up synthesis is required to deliver multigram quantities for further testing.

Apex Molecular is well equipped and experienced in executing these rapid scale-up projects. With an initial route evaluation to identify the chemistry challenges followed by a short development phase to de-risk the process followed by the scale-up synthesis we ensure our customers project progress in a timely and efficient manner with a scale up process that is fit for purpose.

Development and Scale Up offering:

- Jacketed vessels up to 20L with heating/ cooling
- Pressure hydrogenation facility
- LCMS and ^{1}H NMR for in-process analysis and final compound characterisation
- Batch records for larger manufacture
- Tech transfer package for further scale up development

Apex Molecular is well equipped and experienced in executing rapid scale-up projects.

We are equipped to see a project through from proof-of-concept to demonstration batch at kilo scale without the need to outsource.

With an initial route evaluation to identify the chemistry challenges followed by a short development phase to de-risk the process followed by the scale-up synthesis.

We ensure our customers' project progress in a timely and efficient manner with a scale up process that is fit for purpose.

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