



Melusine - unexplored libraries of peptides & proteins for lead discovery

Melusine libraries are distinctive choices of high quality venoms meticulously prepared and pre-fractionated on our automated platform using our well-established standard operating procedures. The fractions are dispensed in microplates and made ready for high throughput screening (HTS) in targeted lead discovery projects.

With well over 1'200 samples, Melusine is world's largest collection of animal venoms. Our catalogue presently offers a selection of 600 venoms (snakes, scorpions, spiders, ants, bees, wasps, frogs, toads, salamanders, cone snails, sea anemones, jellyfishes, soft corals, gorgonians, and stonefishes) and 200 insect hemolymphs available from our stock and ready for high throughput screening and follow-up programmes.



Melusine are unique collections designed by Atheris for targeted discovery of new bioactives that our team of experts can help to select for specific research activities using our long-term expertise and our proprietary databases and biocomputing tools. We also willingly assist you for the hit follow-up, resupply, sub-fractionation, deconvolution, structure, elucidation, synthesis and lead optimisation processes making best use of our unique *Venomics* platform for more efficient, faster and cheaper delivery of results.



A branch of Atheris Laboratories



Libraries That Deliver !

Designed to discover tomorrow's drugs

Unique collections of pre-fractionated venoms, ready-made for HTS

Animal venoms are complex mixtures each made of hundreds of natural biologics, mainly peptides and proteins, but also small molecules. These bioactives have been designed by Nature through million years of evolution to modulate a broad range of pharmacological targets with high potency and selectivity. Venoms are a proven source of innovative drugs to treat major human diseases.

Melusine libraries are distinctive choices of more than 400 high quality venoms (from snakes, scorpions, spiders, ants, bees, wasps, frogs, toads, salamanders, cone snails, sea anemones, jellyfishes, soft corals, gorgonians, and stonefishes) that are prepared and pre-fractionated on our automated platform using our well-established standard operating procedures. The fractions are dispensed in microplates and made ready for high throughput screening.

We also offer hit follow-up, deconvolution, structural elucidation, synthesis and lead optimisation services.

It is important to consider that venoms :

- Are mostly unexplored
- Offer a significantly higher success rate in lead-discovery
- Are made of highly selective and potent (nM and pM) bioactives
- Generate original lead compounds with a high drugability potential
- Lead to competitive intellectual property assets

Contact us : wonder@melusine.com

www.melusine.com

Melusine: Acts & Facts

The Melusine libraries are prepared in microplates on the following basis in the standard 1x format:

- A unique collection of up to 600 high quality venoms with certificates of analysis
- A proprietary library of 200 insect hemolymphs that further broaden the molecular diversity
- A grand total of 48'000 venom fractions, a library containing approximately 300'000 molecules
- Offered on a “price per venom” basis or as collections (i.e. 4, 12, 24, 60, 100, 200 or 400 venoms)
- Expert assistance in venom selection for targeted lead discovery projects
- Each sample is pre-fractionated into 80 fractions that are dispensed in microplates
- One 96-well plate contains 80 fractions from one venom, plus 16 empty wells for controls
- One 384-well plate contains 320 fractions from 4 venoms, plus 64 empty wells for controls
- Each well typically contains 5-20 molecules, sometimes even pure compounds
- 1x format designed for 1-3 primary screens in duplicates to target nM & pM activities
- 1x bioactives are at an estimated concentration of 1-10 µM if dissolved in 50-100 µL, on average
- The microplates are prepared and shipped according to our customer’s requirements
- Resupply on a *per-well* or *per-venom* basis is guaranteed

Custom Melusine collections, a few examples

- 2x, 4x, 8x, 20x and 40x format with larger amounts of venom to conduct multiple screens
- 10, 20 or 40 fractions per venom only, for low throughput or expensive assays
- Peptide-enriched or small molecules collections with 1, 3, 5 or 10 kDa cut-off to discard proteins
- Fragment-based collections of enzymatically digested venoms with peptides \leq 2 kDa typically
- Collections from other natural sources (bacteria, fungi, yeast, plants, edible organisms, etc.)
- Private exclusive collections of extremely rare & unexplored venoms can be made available

Deconvolution process - hit follow-up and hit-to-lead strategies

We happily take in charge the deconvolution process with our integrated *Venomics* platform (combining bioactivity-guided, computer-assisted and structure-driven approaches) and typical follow-up steps include:

- Resupply of hits and primary MS and MS/MS analysis for primary evaluation
- Sub-fractionation of hits and delivery of sub-fractions
- Final purification of hits and structural elucidation (*de novo* MS/MS and Edman sequencing)
- Evaluation of hits (tech survey, IPR, databases & bioinformatic loops), synthesis for validation
- Lead optimisation through molecular design & screening for natural analogues in related venoms.



200'000 bioactives
32'000 wells
400 venoms

innovation

designed to discover tomorrow's drugs

melusine[®]
Discovery Kits

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melusine[®]
Discovery Kits

compound libraries
unexplored collections
pre-fractionated venoms
ready-made for HTS lead discovery

Melusine, a product of Atheris Laboratories distributed by Bachem

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Bachem. Leading beyond peptides

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