



The Maybridge Screening Collection

Maybridge... Bringing Life to Drug Discovery™

Maybridge® produces innovative chemical Building Blocks and Screening Compounds and provides Contract Medicinal Chemistry and Custom Libraries for the drug discovery industry.

The Maybridge Screening Collection

As a result of the developments in genomic research the number of new protein/receptor targets is set to increase dramatically. Screening continues to be a very important tool for drug discovery, particularly for general screening of structurally uncharacterised targets. Against such targets discovery efficiency and productivity can obviously be improved by screening libraries designed to offer maximum diversity whilst retaining drug-like characteristics. The Maybridge Screening library offers just that – a highly diverse pharmacophore-rich collection of hit-like and drug-like compounds.

The drug discovery process is long and expensive. Our aim is to help you to shorten this process, by producing a diverse collection of drug-like molecules, which provide value in Screening programmes. Some of the features of the collection are outlined below:

Diversity: The Maybridge Screening Collection, of over 60,000 compounds, was mapped against the 400,000 known theoretical pharmacophores in the World Drug Index (WDI), by Oxford Molecular. It was found that ca. 87% are expressed in the Maybridge Screening collection*. This collection therefore provides a far-reaching spread of active moieties, which can generate great value in screening programmes.

(Calculations carried out by Oxford Molecular using Chem-X definition i.e. Triplets of H-bond acceptors, H-bond donors, aromatic ring centres and positive nitrogen atoms.)*

An independent study carried out by McGregor and Pallai comparing the diversity of 10 commercially available libraries and the Available Chemicals Directory (ACD), showed that out of the libraries that were produced in-house, Maybridge had the most diverse library i.e. the most singletons (clusters with one member), and the highest number of clusters.

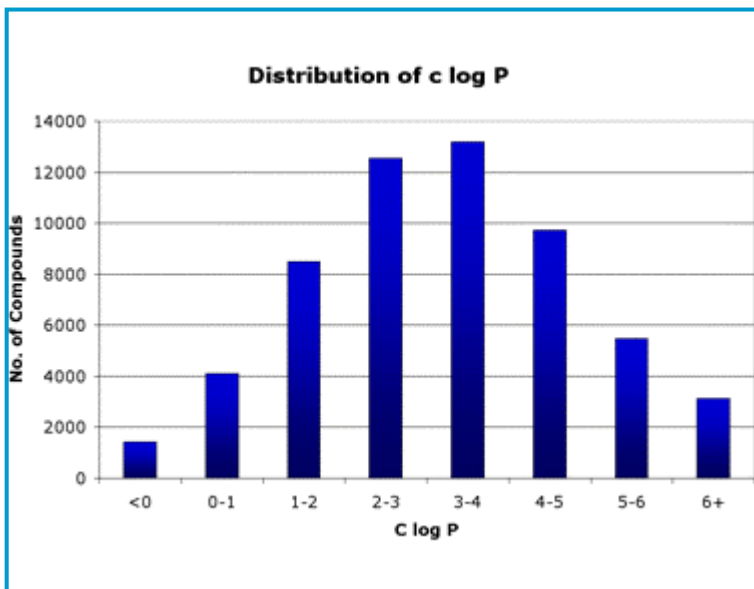
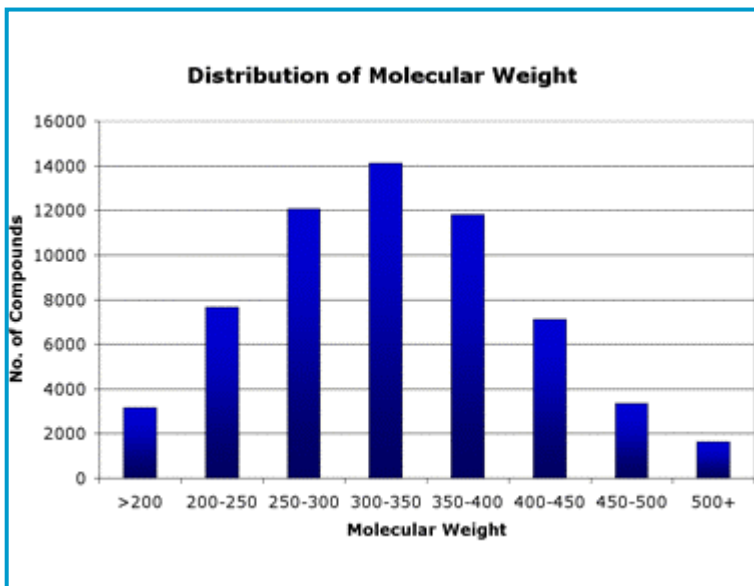
(Journal of Chemical Information and Computer Sciences; 1997; 37(3); 443-448.)

Further assessment of the collection recently was performed by ChemoMine Consultancy who concluded that, at 0.95 similarity level, over 90% of the Collection, including nearly 50,000 singletons, was required to access the rich diversity within the Maybridge Screening Collection

Hit-like: Maybridge's collection has a high degree of 'hit-like' character i.e. they can be elaborated using the building blocks in our Reactive Intermediates and Maybridge Organics collections into so-called 'leads'.

The paper by Teague et al*, summarises that the ideal hit profile of a compound is clogP 1-3 and molecular weight 100-350. The information in the table below illustrates that a large portion of the Screening Collection complies with these hit-like characteristics.

(* S.J. Teague et al., *Angew. Chem. Int. Edn.*, 1999, 38, No.24, pp3743-3748)





Drug-like: The collection also demonstrates classic characteristics of drug-like molecules, as defined by Lipinski's so-called 'Rule of 5'. These rules are essentially a pragmatic reduction of the common features of the drugs represented by the WDI. The collection is highly compliant with Lipinski's guidelines as the table shows.

Lipinski Rule**	Maybridge Screening Collection
< 5 H-bond donors	99.7% <5
< 10 H-bond acceptors	99.8% <10
cLog P <5	mean log P 2.83, 95% in range -0.11 to 6.3
Mol. Weight <500	mean mol. weight 308, 95% in range 146-498

(** Lipinski, C.A., Lombardo, F., Dominy, B.W. and Feeney, P.J. (1996). *Experimental and computational approaches to estimate solubility and permeability in drug discovery and development settings. Advanced Drug Delivery Reviews 23 3-25.*)

Purity: We aim to produce compounds with a minimum purity of 90%+ by LC/MS and/or H¹NMR, and other analytical techniques if required.

Reactives excluded: Certain chemical moieties have been excluded from our database to produce a set of chemical structures that will have the best "drug-like" properties. Removal of these moieties will minimise the number of potential 'false leads'. Further details, including a list of excluded chemical moieties, can be found on our Internet Site at www.maybridge.com/html/m_hts_exclude.htm

Calculated ADME properties: The Screening Collection comes with calculated properties for key ADME parameters including:

- Blood-brain partitioning
- Human intestinal adsorption
- Aqueous solubility

This valuable information further assists in the selection of suitable compounds for your screening campaign and the assessment of resulting hits.

Intellectual Property: Customers should note that in relation to Screening Collection compounds, Maybridge does not seek any royalties or additional payment following purchase by the customer. Maybridge offers no licence of immunity under any patent with the sale of any product, however, we are not aware of infringing any third party intellectual property rights.

Made by Maybridge: Maybridge makes almost all of the compounds in its collection, enabling easier re-supply from known, sometimes proprietary intermediates. These screening compounds are predominantly synthesised in gram quantities ensuring a high probability of re-supply of material. We can therefore offer useful customer support when a hit is discovered in terms of supply of close analogues, supply of intermediates (starting point for lead library production) or, if relevant, contract (and therefore confidential) research in collaboration with the customer using our heterocyclic chemistry expertise.

The compounds in our collection are available in many formats, including a number of pre-plated and/or pre-selected options, as outlined below. Compounds can be supplied as dry powders or films in plates or vials, in milligram, gram or micro/millimol quantities and are weighed to a high degree of accuracy. Plates can be produced in replicate if required.

Please call us on +44 (0)1840 770567, or your local distributor, for more information.

HitFinder™

- 16,000 competitively priced premier compounds selected to represent the diversity of the Maybridge Screening Collection. HitFinder Compounds are selected from the Maybridge Screening Collection using a clustering algorithm employing standard Daylight fingerprints with the Tanimoto similarity index (*J.Chem.Inf.Comput.Sci.*, 1999, **39**, 747-750), clustering at 0.7 similarity. All compounds fit Lipinski guidelines for "Drug-likeness" (ClogP ≤ 5 , H-bond acceptors ≤ 10 , H-bond donors ≤ 5 , Molecular Weight ≤ 500), and all have purity greater than 90%.
- Each plate represents a unique sample from this selection and is diverse in its own right, but the entire set of 200 plates reflects the diversity of the entire Maybridge Screening Collection.
- HitFinder plates can be purchased individually or as sets of plates, all have reserve stock held for re-supply when necessary. Each plate has a unique number for purchase identification making further purchases easy and incorporating the flexibility to meet any budget.
- Supplied as 1 μmol of each compound in Matrix 96-well clear polystyrene microplates, U-bottom 250 μl [Cat no: 4911] sealed with foil sealing tape [Cat no: 4419] with 80 compounds per plate, first and last columns empty.

HitDiscover™

Would you like to access the Maybridge Screening Collection through a ready to screen collection at competitive prices?

Maybridge® can now offer its HitDiscover™ Collection:

- A ready to screen collection of ~58,000 Maybridge Screening Compounds in dry film format.
- Compounds pre-plated as 1 μmol per compound; 80 compounds per plate; first and last columns empty.
- All compounds of minimum 90% purity.
- Immediate re-supply is available on 90% of compounds supplied.



Maybridge

Maybridge produces products and services for drug discovery chemistry and research. These include:

- Synthesis and supply of Maybridge building blocks and templates.
- CustomBlocks™ – development and production of gram to kilogram quantities of bespoke building blocks or templates.
- CustomSynth™ – scale-up from gram to kilogram quantities of Maybridge Building Blocks and customers own templates or building blocks.
- Maybridge Screening Collections for hit generation.
- Custom Library Synthesis for hit generation and hit follow-up.
- Medicinal chemistry services for drug discovery research.
- Custom Synthesis of Intermediates.

We have a team of chemists with a range of skills including:

- Medicinal chemistry
- Organic synthetic chemistry with a focus on heterocyclic chemistry, and high throughput parallel synthesis in solution and solid phase
- Chiral synthesis
- Scale-up synthesis at the multi kg scale

Maybridge can, therefore, assist with many stages of a drug discovery programme: from supply of compounds for Screening, to hit follow-up with hit-to-lead medicinal chemistry programmes, lead optimisation and scale-up.

Visit www.maybridge.com for more information.

Maybridge
Trevillet
Tintagel
Cornwall
PL34 OHW
UK

In the US contact:

Fisher Scientific
Telephone (toll free) 1-800 766 7000

Maybridge
Telephone (toll free) 1-866 205 3502

In Europe contact:

Maybridge
Telephone +44 (0)1840 770567

In Japan contact:

Namiki Shoji Co. Ltd
Telephone (03) 3354 4026