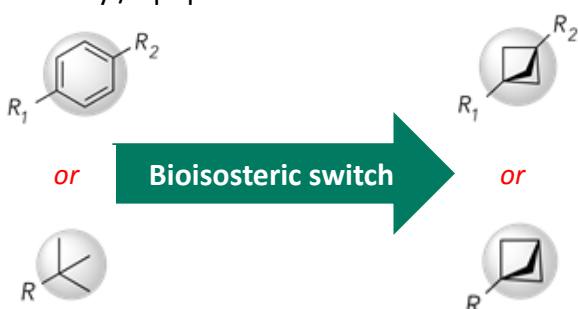


## Bicyclo[1.1.1]pentanes

for bioisosteric replacement of aromatic or lipophilic groups

### Advantages:

Bicyclo[1.1.1]pentanes are novel chemical tools for bioisosteric replacement of aromatic and lipophilic groups. Bicyclo[1.1.1]pentanes are rigid scaffolds with one or two exit vectors positioned in a linear manner, thereby mimicking the para substitution pattern on arenes or tert-butyl/ lipophilic moieties. Monosubstituted bicyclo[1.1.1]pentanes can also serve as surrogates for tert-butyl/ lipophilic moieties.



For high-quality bicyclo[1.1.1]pentanes at commercial scale, VIO Chemicals collaborates with SpiroChem, the world leader in the design and synthesis of bicyclo[1.1.1]pentanes. SpiroChem's novel and proprietary synthetic pathways evolve into cost-efficient manufacturing processes, which allow for large-scale production of a broad range of bicyclo[1.1.1]pentanes. In this collaboration, SpiroChem undertakes route scouting, small scale lab synthesis and route optimisation, while VIO Chemicals performs process optimisation, technology transfer to its

facilities in China and commercial scale manufacturing.

### Features:


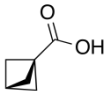
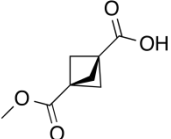
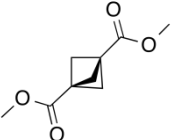
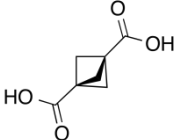
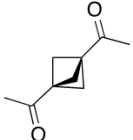

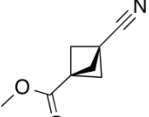
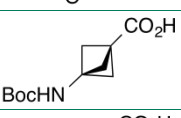
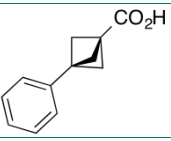
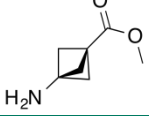
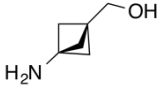
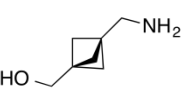
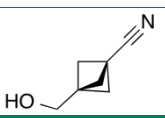
- Improved physico-chemical properties
- Improved pharmaco-kinetic properties

### Benefits:

Bicyclo[1.1.1]pentanes are excellent chemical tools for bioisosteric replacement of aromatic groups. Due to their three-dimensional fragments, they possess equivalent or improved physico-chemical and pharmacokinetic properties compared to the arene groups they are replacing. Especially when the arene group serves as a spacer/scaffold and is not involved in Pi interactions with the biological target, switching to the corresponding bicyclo[1.1.1]pentane is strongly advised. Bicyclo[1.1.1]pentanes are highly recommended to medicinal chemists not only for their improved properties but also for the chemical diversity and novel IP space that they offer.

### Applications:

Bicyclo[1.1.1]pentanes are commonly used in drug discovery programs and the demand for these building blocks is growing exponentially.

Bicyclo[1.1.1]pentanes	Product name	CAS Nr	Product code
	Bicyclo[1.1.1]pentane-1-amine hydrochloride	22287-35-0	SPC-a120a
	Bicyclo[1.1.1]pentane-1-carboxylic acid	22287-28-1	SPC-a121
	3-(Methoxycarbonyl)bicyclo[1.1.1]pentane-1-carboxylic acid	83249-10-9	SPC-a188
	Dimethyl bicyclo[1.1.1]pentane-1,3-dicarboxylate	115913-32-1	SPC-a851
	Bicyclo[1.1.1]pentane-1,3-dicarboxylic acid	56842-95-6	SPC-a187
	1,1'-(Bicyclo[1.1.1]pentane-1,3-diyl) bis(ethan-1-one)	115913-30-9	SPC-i070
	Bicyclo[1.1.1]pentane-1,3-diamine dihydro-chloride	147927-61-5	SPC-189
	Methyl 3-cyanobicyclo[1.1.1]pentane-1-carboxylate	156329-62-3	SPC-a200
	3-Boc-Aminobicyclo[1.1.1]pentane-1-carboxylic acid	303752-38-7	SPC-a201
	3-Phenylbicyclo[1.1.1]pentane-1-carboxylic acid	83249-04-1	SPC-a209
	Methyl 3-aminobicyclo[1.1.1]pentane-1-carboxylate hydrochloride	676371-65-6	SPC-a202
	(3-Aminobicyclo[1.1.1]pentan-1-yl) methanol hydrochloride	1638767-26-6	SPC-a203
	(3-(Aminomethyl)bicyclo[1.1.1]pentan-1-yl)methanol	1823918-02-0	SPC-a204
	3-(Hydroxymethyl)bicyclo[1.1.1]pentane-1-carbonitrile	1370705-39-7	SPC-207