Chemical probes

Potent and selective modulators of protein functions accelerating drug discovery

thermo scientific

De-risk your drug discovery projects with our new range of chemical probes

Our chemical probes are selective small-molecule modulators of a protein's function allowing the user to ask mechanistic and phenotypic questions about their molecular target in cell-based or animal studies.

Chemical probes represent an important component of both academic and pharmaceutical drug discovery research reducing the technical or biological risks of pursuing the wrong pathway or target before commencing clinical trials. Chemical probes are essential in the validation of new molecular targets for a therapeutic indication.

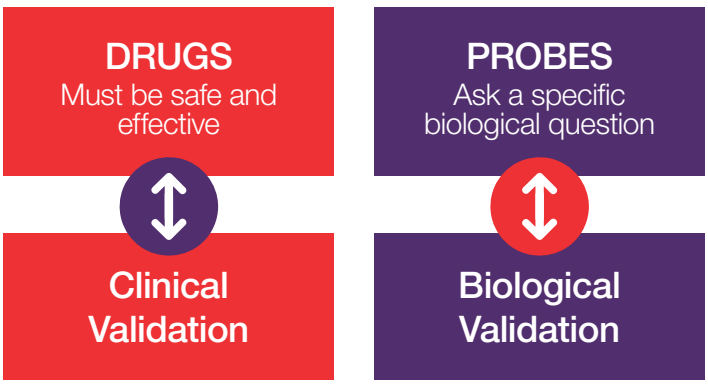
The table below provides the clear differences between small-molecule drugs and chemical probes.

DRUGS Must be safe and effective	PROBES Ask a specific biological question
May have undefined MoA	Defined MoA required
IP restrictions; limited availability	Needs selectivity
Must have human bioavailability	Freely available (both the physical compound itself and activity data)
High bar for physicochemical (guidelines for MW, lipophilicity, etc.) and pharmaceutic properties (stability, reasonable and economic sythesis, defined crystallization form etc.)	Drug-like properties, such as bioavailability, not necessarily required
Article reference: https://www.nature.com/articles/nchembio.1867	Value is markedly enhanced by use of structurally related inactive and structurally unrelated active compounds

Figure 1: Comparison of small molecule drugs and chemical probes

Chemical probes can be used to help establish the relationship between a molecular target and the broader biological consequences of modulating that target in cells or organisms. Thus, they can be used to discover new biology relating to that target, to clarify the relationship between the target and a phenotype, and to validate that a particular target is a suitable intervention point to impact the progression or outcome of a disease.

They offer a biological validation rather than a clinical validation of the target.



Protein kinase

Cat No.	Chemical Name	Protein Target Name	CAS No.	Pack Size
468081000	Alectinib	ALK	1256580-46-7	100 mg
467951000	AZ191	DYRK1B	1594092-37-1	100 mg
467941000	Bafetinib	BCR-ABL, LYN	859212-16-1	100 mg
468091000	Barasertib	AURKB	722544-51-6	100 mg
467961000	BI-2536	PLK1, PLK2, PLK3	755038-02-9	100 mg
467971000	BIX-02188	MAP2K5	334949-59-6	100 mg
468111000	BLU9931	FGFR4	1538604-68-0	100 mg
467981000	CFI-400945	PLK4	1338806-73-7	100 mg
468251000	CGI1746	BTK	910232-84-7	100 mg
468131000	CHIR-99021	GSK3A, GSK3B	252917-06-9	100 mg
467991000	CP-673451	PDGFRß	343787-29-1	100 mg
468181000	Filgotinib	JAK1	1206161-97-8	100 mg
468021000	GNE7915	LRRK2	1351761-44-8	100 mg
468191000	GNF-5	BCR-ABL	778277-15-9	100 mg
468201000	GSK481	RIPK1	1622849-58-4	100 mg
468211000	GSK583	RIPK2	1346547-00-9	100 mg
468101000	Infigratinib	FGFR1, FGFR2, FGFR3, FGFR4	872511-34-7	100 mg
468261000	P505-15	SYK	1370261-96-3	100 mg
468271000	SCH772984	MAPK1, MAPK3	942183-80-4	100 mg
468061000	Spebrutinib	BTK	1202757-89-8	100 mg
467881000	UNC2025	MERTK, FLT3	1429881-91-3	100 mg
467891000	VE-821	ATR	1232410-49-9	100 mg

Epigenetics

Cat No.	Chemical Name	Protein Target Name	CAS No.	Pack Size
468071000	A-366	EHMT2, EHMT1	1527503-11-2	100 mg
467911000	ACY-738	HDAC6	1375465-91-0	100 mg
467831000	BIX-01294	EHMT2	935693-62-2	100 mg
468141000	EED226	EED	2083627-02-3	100 mg
468151000	EI1	EZH2	1418308-27-6	100 mg
468031000	GSK2801	BAZ2A, BAZ2B	1619994-68-1	100 mg
468041000	GSK-5959	BRPF1	901245-65-6	100 mg
468001000	GSK-J4 hydrochloride	KDM6A, KDM6B	1797983-09-5	100 mg
467841000	I-BET151	BRD2, BRD3, BRD4	1300031-49-5	100 mg
468161000	Pinometostat	DOT1L	1380288-87-8	100 mg
468171000	Tazemetostat	EZH2	1403254-99-8	100 mg
468221000	UNC1999	EZH1, EZH2	1431612-23-5	100 mg

Hormone pathway

Cat No.	Chemical Name	Protein Target Name	CAS No.	Pack Size
468011000	GW3965 hydrochloride	LXR-alpha, LXR-beta	405911-17-3	100 mg
467871000	T0901317	LXR-alpha, LXR-beta	293754-55-9	100 mg

Lipid kinase

Cat No.	Chemical Name	Protein Target Name	CAS No.	Pack Size
468121000	Alpelisib	PIK3CA	1217486-61-7	100 mg
467861000	Pictilisib	PIK3CA, PIK3CD	957054-30-7	100 mg

Other

Cat No.	Chemical Name	Protein Target Name	CAS No.	Pack Size
467901000	A-1210477	MCL1	1668553-26-1	100 mg
467921000	AGI-5198	IDH1 R132H	1355326-35-0	100 mg
467821000	AGI-6780	IDH2 R140Q	1432660-47-3	100 mg
467851000	JW55	TNKS, TNKS2	664993-53-7	100 mg
468231000	Venetoclax	BCL2	1257044-40-8	100 mg

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