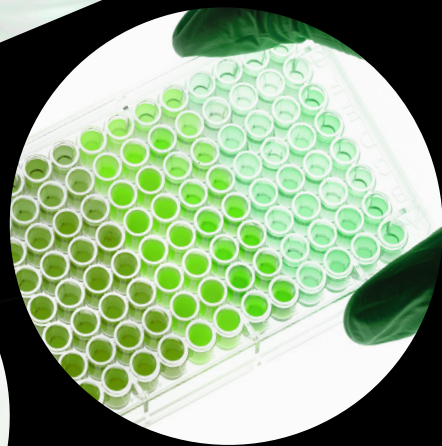
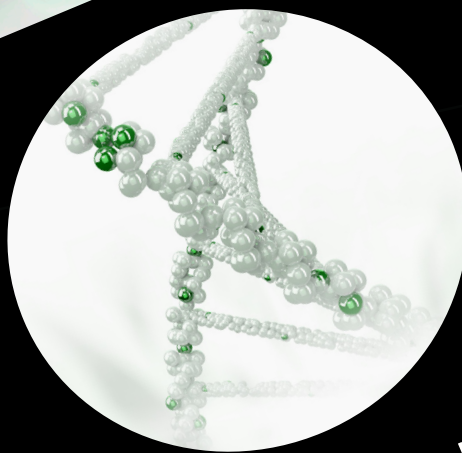


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- Radiolabeled HTS & Profiling • High Quality Epigenetic Proteins •
- The Largest Kinase & Epigenetic Panels •
- Early Drug Discovery Collaboration •

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Reaction Biology feels like a family company to me but is a big company in a good way. I feel like a person, a client and am treated 1st class. However, I get results that are of the highest professional standard, worthy of a bigger corporation. I feel that big companies treat you as a “number”, churn out data and forget about you once the invoice has been settled. With you, it’s like I know you all personally and you always have time to respond to queries and are very friendly ”

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Gold Standard Radiolabeled Data.

Avoid false positives & negatives caused by other assay formats.

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Reaction Biology hires experts from a variety of large pharma companies who are available to assist you during every step of the process.

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One free control compound included in every kinase assay and in your report.

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As a small company, we will treat you as a name instead of a number. With a scientist at every phone line, research support is only seconds away.

Create Your Own Panel
or

Choose One of our Bi-monthly Full Panels:

369 Wild Type Kinase Panel
202 Mutant Kinase Panel
20 Atypical Kinase Panel
17 Lipid Kinase Panel

Kinase

Wild Type Kinases (369)

ABL1	CAMK2b	CK1d
ABL2/ARG	CAMK2d	CK1epsilon
ACK1	CAMK2g	CK1g1
AKT1	CAMK4	CK1g2
AKT2	CAMKK1	CK1g3
AKT3	CAMKK2	CK2a
ALK	CDC7/DBF4	CK2a2
ALK1/ACVRL1	CDK1/cyclin A	c-Kit
ALK2/ACVR1	CDK1/cyclin B	CLK1
ALK3/BMPR1A	CDK1/cyclin E	CLK2
ALK4/ACVR1B	CDK2/cyclin A1	CLK3
ALK5/TGFBR1	CDK2/cyclin A	CLK4
ALK6/BMPR1B	CDK2/cyclin E	c-MER
ARAF	CDK2/cyclin O	c-MET
ARK5/NUAK1	CDK3/cyclin E	COT1/MAP3K8
ASK1/MAP3K5	CDK4/cyclin D1	CSK
Aurora A	CDK4/cyclin D3	c-Src
Aurora B	CDK5/p25	CTK/MATK
Aurora C	CDK5/p35	DAPK1
AXL	CDK6/cyclin D1	DAPK2
BLK	CDK6/cyclin D3	DCAMKL1
BMPR2	CDK7/cyclin H	DCAMKL2
BMX/ETK	CDK9/cyclin K	DDR1
BRAF	CDK9/cyclin T1	DDR2
BRK	CDK9/cyclin T2	DLK/MAP3K12
BRSK1	CDK14 (PFTK1)/cyclin Y	DMPK
BRSK2	CDK16/cyclin Y	DMPK2/CDC42BPG
BTK	CDK17/cyclin Y (PCTK2)	DRAK1/STK17A
CAMK1a	CDK18/cyclin Y	DYRK1/DYRK1A
CAMK1b	CDK19/cyclin C	DYRK1B
CAMK1d	CHK1	DYRK2
CAMK1g	CHK2	DYRK3
CAMK2a	CK1a1	DYRK4
	CK1a1L	EGFR

Kinase HotSpot

600+ Kinases

Radiolabeled ^{33}P HTS & Profiling

The Largest Kinase Panel

One Free Control Compound in Every Assay

Wild Type Kinases (continued)

EPHA1	GRK3	LIMK1	MSK1/RPS6KA5
EPHA2	GRK4	LIMK2	MSK2/RPS6KA4
EPHA3	GRK5	LKB1	MSSK1/STK23
EPHA4	GRK6	LOK/STK10	MST1/STK4
EPHA5	GRK7	LRRK2	MST2/STK3
EPHA6	GSK3 α	LYN	MST3/STK24
EPHA7	GSK3 β	LYN B	MST4
EPHA8	Haspin	MAK	MUSK
EPHB1	HCK	MAPKAPK2	MYLK3
EPHB2	HGK/MAP4K4	MAPKAPK3	MYLK4
EPHB3	HIPK1	MAPKAPK5/PRAK	MYO3A
EPHB4	HIPK2	MARK1	MYO3B
ERBB2/HER2	HIPK3	MARK2/PAR-1B α	NEK1
ERBB4/HER4	HIPK4	MARK3	NEK2
ERK1/MAPK3	HPK1/MAP4K1	MARK4	NEK3
ERK2/MAPK1	IGF1R	MEK1	NEK4
ERK5/MAPK7	IKK α /CHUK	MEK2	NEK5
ERK7/MAPK15	IKK β /IKBK β	MEK3	NEK6
ERN1/IRE1	IKK ϵ /IKBKE	MEK5	NEK7
ERN2/IRE2	IR	MEKK1	NEK8
FAK/PTK2	IRAK1	MEKK2	NEK9
FER	IRAK4	MEKK3	NEK11
FES/FPS	IRR/INSRR	MEKK6	NIM1
FGFR1	ITK	MELK	NLK
FGFR2	JAK1	MINK/MINK1	OSR1/OXSR1
FGFR3	JAK2	MKK4	P38 α /MAPK14
FGFR4	JAK3	MKK6	P38 β /MAPK11
FGR	JNK1	MKK7	P38d/MAPK13
FLT1/VEGFR1	JNK2	MLCK/MYLK	P38g/MAPK12
FLT3	JNK3	MLCK2/MYLK2	p70S6K/RPS6KB1
FLT4/VEGFR3	KDR/VEGFR2	MLK1/MAP3K9	p70S6K β /RPS6KB2
FMS	KHS/MAP4K5	MLK2/MAP3K10	PAK1
FRK/PTK5	KSR1	MLK3/MAP3K11	PAK2
FYN	KSR2	MLK4	PAK3
GCK/MAP4K2	LATS1	MNK1	PAK4
GLK/MAP4K3	LATS2	MNK2	PAK5
GRK1	LCK	MRCK α /CDC42BPA	PAK6
GRK2	LCK2/ICK	MRCK β /CDC42BPB	PASK

Kinase

GLOBALLY RANKED

In a recent survey of 78 research labs around the globe, Reaction Biology Corp. scored the **highest number of positive ratings** for its radiolabeled kinase profiling service, Kinase HotSpot.

QUICK TURNAROUND

Ask about our 1 week guarantee!

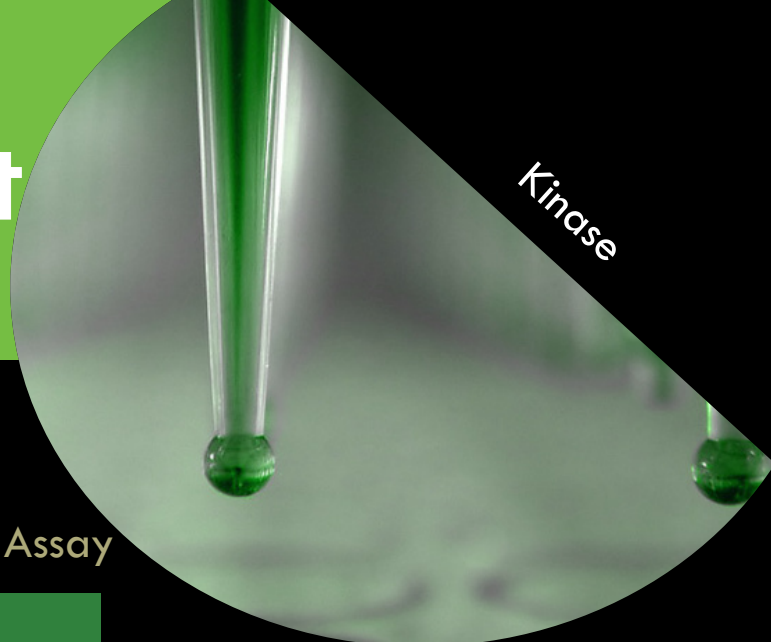
Kinase HotSpot

600+ Kinases

Radiolabeled ^{33}P HTS & Profiling

The Largest Kinase Panel

One Free Control Compound in Every Assay

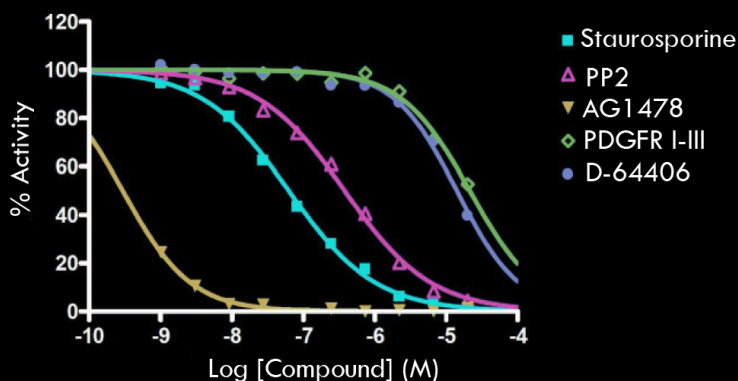


Wild Type Kinases (continued)

PBK/TOPK	PRKX	STK33
PDGFR α	PYK2	STK38/NDR1
PDGFR β	RAF1	STK38L/NDR2
PDK1/PDPK1	RET	STK39/STLK3
PEAK1	RIPK2	SYK
PHKg1	RIPK3	TAK1
PHKg2	RIPK4	TAOK1
PIM1	RIPK5	TAOK2
PIM2	ROCK1	TAOK3/JIK
PIM3	ROCK2	TBK1
PKA	RON/MST1R	TEC
PKAc β	ROS/ROS1	TESK1
PKAc γ	RSK1	TESK2
PKC α	RSK2	TGFBR2
PKC β 1	RSK3	TIE2/TEK
PKC β 2	RSK4	TLK1
PKC δ	SBK1	TLK2
PKCepsilon	SGK1	TNIK
PKCeta	SGK2	TNK1
PKC γ	SGK3/SGKL	TRKA
PKCiota	SIK1	TRKB
PKCmu/PRKD1	SIK2	TRKC
PKCnu/PRKD3	SIK3	TSSK2
PKCtheta	SLK/STK2	TSSK3/STK22C
PKCzeta	SNARK/NUAK2	TTBK1
PKD2/PRKD2	SNRK	TTBK2
PKG1 α	SRMS	TXK
PKG1 β	SRPK1	TYK1/LTK
PKG2/PRKG2	SRPK2	TYK2
PKN1/PRK1	SSTK/TSSK6	TYRO3/SKY
PKN2/PRK2	STK16	ULK1
PKN3/PRK3	STK21/CIT	ULK2
PLK1	STK22D/TSSK1	ULK3
PLK2	STK25/YSK1	VRK1
PLK3	STK32B/YANK2	VRK2
PLK4/SAK	STK32C/YANK3	WEE1

WNK1
WNK2
WNK3
YES/YES1
YSK4/MAP3K19
ZAK/MLTK
ZAP70
ZIPK/DAPK3

Reference Compound IC₅₀ for EGFR



GET RESULTS

Reports will include raw data,
% enzyme activity or % inhibition,
control compound's IC₅₀ values and
IC₅₀ values with curve fitting.

Kinase HotSpot

600+ Kinases

Radiolabeled ^{33}P HTS & Profiling
The Largest Kinase Panel
One Free Control Compound in Every Assay

Mutant Kinases continued (202+)

ABL1 (E255K)	BRAF (T599_V600insT)	c-MET (T992I)	FGFR1OP-FGFR1	PDGFRb-TPM3
ABL1 (E255V)	BRAF (V599E)	c-MET (T1173I)	FGFR2 (E565G)	PKD2 (G870E)
ABL1 (F317I)	BRAF (V600A)	c-MET (V1092I)	FGFR2 (K526E)	RET (A883F)
ABL1 (F317L)	BRAF (V600D)	c-MET (Y1230A)	FGFR2 (K641R)	RET (E762Q)
ABL1 (G250E)	BRAF (V600K)	c-MET (Y1230C)	FGFR2 (K659N)	RET (G691S)
ABL1 (H396P)	BRAF (R506_K507insVLR)	c-MET (Y1230D)	FGFR2 (N549H)	RET (L790F)
ABL1 (M351T)	BRAF-FAM131B (Fex2Bex9)	c-MET (Y1230H)	FGFR2 (R612T)	RET (M918T)
ABL1 (Q252H)	BRAF-KIAA1549 (Kex15Bex9)	c-MET (Y1235D)	FGFR2 (V564F)	RET (R749T)
ABL1 (T315I)	BRAF-KIAA1549 (Kex16Bex9)	c-Src (T341M)	FGFR2 (V555M)	RET (R813Q)
ABL1 (V299L)	BRAF-SRGAP3 (Sex12Bex9)	DDR2 (N456S)	FGFR3 (G697C)	RET (S891A)
ABL1 (Y253F)	BTK (C481S)	DDR2 (T654M)	FGFR3 (K650E)	RET (S904F)
ABL1 (Y253H)	BTK (E41K)	EGFR (A763_Y764insFHEA)	FGFR3 (K650M)	RET (S904A)
AKT1 (E17K)	BTK (P190K)	EGFR (C797A)	FGFR3 (K650Q)	RET (V778I)
AKT2 (E17K)	CHK2 (I157T)	EGFR (C797S)	FGFR4 (N535K)	RET (V804E)
AKT3 (E17K)	c-Kit (A829P)	EGFR (T790M/C797S/L858R)	FGFR4 (V550E)	RET (V804L)
AKT3 (G171R)	c-Kit (d557-558)	EGFR (d746)	FGFR4 (V550L)	RET (V804M)
ALK (C1156Y)	c-Kit (D816E)	EGFR (d746-750/T790M/C797S)	FGFR4 (V550M)	RET (Y791F)
ALK (L1152R)	c-Kit (D816F)	EGFR (d747-749)	FLT3 (D835Y)	RET (Y806H)
ALK (L1196M)	c-Kit (D816Y)	EGFR (D761Y)	FLT3 (ITD)	RET-BCR
ALK (F1174L)	c-Kit (D816H)	EGFR (D770GY)	FLT3 (ITD)-NPOS	RET-CCDC6 (PTC1)
ALK (F1174L)-NPM1	c-Kit (D816I)	EGFR (G719C)	FLT3 (ITD)-W51	RET-PRKAR1A (PTC2)
ALK (F1174S)	c-Kit (D816V)	EGFR (G719D)	FLT3 (F594_R595insR)	RET-NCOA4 (PTC3)
ALK (G1202R)	c-Kit (D820E)	EGFR (G719S)	FLT3 (F595_R595insREY)	ROS1 (G2032R)
ALK (G1269A)	c-Kit (D820Y)	EGFR (L747S)	FLT3 (R595_E596insEY)	ROS1-GOPC
ALK (G1269S)	c-Kit (K642E)	EGFR (L858R)	FLT3 (Y591_V592insVDFREYEYD)	ROS1-TPM3
ALK (R1275Q)	c-Kit (T670I)	EGFR (L861Q)	FYN (Y531F)	RSK2 (I416V)
ALK (S1206R)	c-Kit (V559A)	EGFR (T790M)	JAK2 (617F)	RSK2 (L608F)
ALK (T1151M)	c-Kit (V559D)	EGFR (T790M, L858R)	KSR1 (A635F)	TIE2 (A1124V)
ALK (T1151-L1152insT)	c-Kit (V559D/V654A)	EGFR (d746-750/T790M)	KSR1 (L639F)	TIE2 (P883A)
ALK (F1174L)-EML4	c-Kit (V559D/T670I)	EGFR (d746-750)	KSR2 (R676S)	TIE2 (R849W)
ALK-NPM1	c-Kit (V560G)	EGFR (d746-750/C797S)	LRRK2 (G2019S)	TIE2 (Y897C)
ALK-TFG	c-Kit (V560G/D816V)	EGFR (d747-749/A750P)	LRRK2 (I2020T)	TIE2 (Y897S)
ALK-TPM3	c-Kit (V560G/N822K)	EGFR (d747-752/P753S)	LRRK2 (R1441C)	TIE2 (Y1108F)
ALK (Q207D)	c-Kit (V654A)	EGFR (d752-759)	MEK1 (P124L)	TRKA (G667C)
ALK2 (R206H)	c-Kit (Y823D)	EGFR (D770_N771insNPG)	MELK (T460M)	TRKA-TFG (TRK-T3)
AXL (R499C)	c-MER (A708S)	ERBB2 (D769H)	p38a (T106M)	TRKA-TPM3
BRAF (d485-489/P490Y)	c-MET (D1228H)	ERBB2 (D769Y)	PDGFRa (D842V)	TRKA-TPR
BRAF (G464V)	c-MET (D1228N)	ERBB2 (P780_Y781insGSP)	PDGFRa (T674I)	YES1 (T348I)
BRAF (G469A)	c-MET (F1200I)	ERBB2 (V777L)	PDGFRa (V561D)	ZAP70 (Y319F)
BRAF (K601E)	c-MET (M1250T)	ERBB2 (V777_G778insCG)	PDGFRa-FIP1L1	
BRAF (L597V)	c-MET (P991S)	FGFR1 (V561M)		

Kinase HotSpot

600+ Kinases

Kinase

Atypical Kinases (20)

AMPK(A1/B1/G1)	EIF2AK1/HRI
AMPK(A1/B1/G2)	EIF2AK2
AMPK(A1/B1/G3)	EIF2AK3/PERK
AMPK(A1/B2/G1)	EIF2AK4/GCN2
AMPK(A2/B1/G1)	mTOR/FRAP1
AMPK(A2/B2/G1)	PDK1/PDHK1
AMPK(A2/B2/G2)	PDK2/PDHK2
AMPK(A2/B2/G3)	PDK3/PDHK3
DNA-PK	PDK4/PDHK4
EEF2K	TRPM7/CHAK1

Lipid Kinases (17)

PI3K (p110α(E542K)/p85α)	PI3KC3
PI3K (p110α(E545K)/p85α)	PI4K2A
PI3K (p110α(H1047R)/p85α)	PI4Ka
PI3K (p110α/p65α)	PI4Kb
PI3Ka (p110α/p85α)	PIP5K1A
PI3Kb (p110b/p85α)	PIP5K1C
PI3Kd (p110d/p85α)	SPHK1
PI3Kg (p120g)	SPHK2
PI3KC2α	

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Named The Most Used Kinase Panel In The Industry

Our kinase panels are run on a monthly schedule, which allows us to offer very competitive pricing, with a turnaround time of only two weeks!

- The Largest Kinase Panel (600+ Kinases)
- All Assays Radioisotope Based (with the exception of lipid kinases)
- 2 Week Turnaround

“As you know, we were a little hesitant on such a broad panel at such an early stage in our project, but we feel it was well worth it.”

SERVICES INCLUDE

- Large Scale HTS
- Large Scale Single Dose Duplicate Profiling
- IC50 Profiling-5 or 10 Dose with Curve Fitting
- ATP Competitive Evaluation
- Compound Binding Reversibility Tests
- Ki Determination Assay Services
- Custom Assay Development
- Substrate Determination Assay
- Early Drug Discovery Collaboration

HMT HotSpot

40+ Methyltransferases

The Largest Methyltransferase Panel
One Free Control Compound in Every Assay

Histone Lysine & Histone Arginine Methyltransferases

Target Radioactivity Based Protein Available

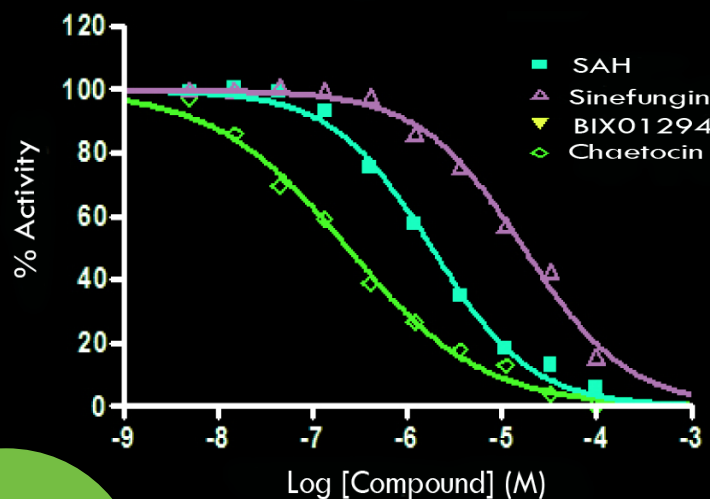
ASH1L	✓	✓
DOT1L	✓	✓
EZH1 Complex	✓	✓
EZH2 Complex	✓	✓
EZH2 (Y641F) Complex	✓	✓
G9a	✓	✓
GLP	✓	✓
MLL1 Complex	✓	✓
MLL2 Complex	✓	✓
MLL3 Complex	✓	✓
MLL4 Complex	✓	✓
NSD1	✓	✓
NSD2	✓	✓
NSD2 (E1099K)	✓	✓
NSD2 (T1150A)	✓	✓
NSD3	✓	✓
PRDM9	✓	✓
PRMT1	✓	✓
PRMT3	✓	✓
PRMT4	✓	✓
PRMT5	✓	✓
PRMT5/MEP50	✓	✓
PRMT6	✓	✓
PRMT7	✓	✓
PRMT8	✓	✓
SET1B Complex	✓	✓
SET7	✓	✓
SET8	✓	✓
SETD2	✓	✓
SMYD1	✓	✓
SMYD2	✓	✓
SUV39H1	✓	✓
SUV39H2	✓	✓
SUV420H1-tv2	✓	✓

DNA Methyltransferases

DNMT1	✓	✓
DNMT3a	✓	✓
DNMT3b	✓	✓
DNMT3b /3L	✓	✓

Epigenetic Assays

Reference Compound IC50 for NSD2



Choose between
Nucleosomes,
Histone Proteins, and
Peptides as Substrates

Other

Target	Radioactivity Based *FlashPlate Assay	Protein Available
COMT*	✓	✓
COMT (V108M)*	✓	✓
METTL21A	✓	
NRMT1	✓	✓
NRMT2	✓	✓

Reader Domain Assays

Epigenetic Assays

HTS & Profiling

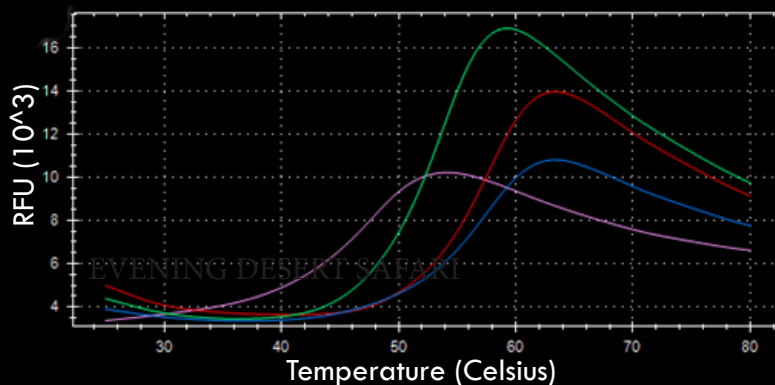
Alphascreen, Thermal Shift & ITC Assays

One Free Control Compound in Every Assay

Reader Domain Proteins (Available with GST or His tag)

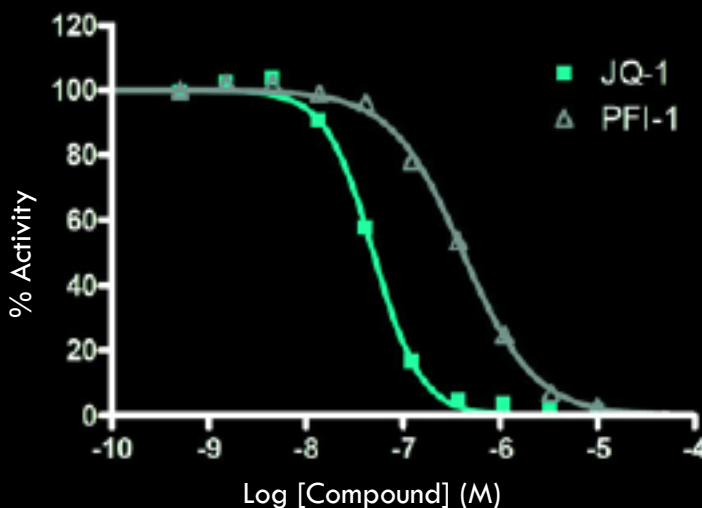
Target	Thermal Shift	AlphaScreen	Protein Available
ASH1L-[BRD]	✓		✓
ATAD2	✓	✓	✓
ATAD2B	✓	✓	✓
BAZ1A	✓		✓
BAZ1B	✓	✓	✓
BAZ2A	✓	✓	✓
BAZ2B	✓	✓	✓
BPTF-[BRD]	✓	✓	✓
BPTF-[PHD-BRD]	✓	✓*	✓
BRD1	✓	✓	✓
BRD2-1	✓	✓	✓
BRD2-2	✓	✓	✓
BRD2-Tandem	✓	✓	✓
BRD3-2	✓	✓	✓
BRD3-2	✓	✓	✓
BRD3-Tandem	✓	✓	✓
BRD4 Full Length	✓	✓	✓
BRD4-1	✓	✓	✓
BRD4-2	✓	✓	✓
BRD4-Tandem	✓	✓	✓
BRD7	✓		✓
BRD9	✓	✓	✓
BRDT-1	✓	✓	✓
BRDT-2	✓		✓
BRDT-Tandem	✓	✓	✓
BRPF1α	✓		✓
BRPF1b	✓	✓	✓
BRPF3	✓	✓	✓
BRWD1-2	✓		✓
BRWD3-2	✓		✓
CBX7-[CHR]	✓		✓
CECR2	✓	✓	✓
CDgamma1-[CHR]	✓		✓
CHD1-[CHR]	✓		✓
CHD2-[CHR]	✓		✓
CHD4-[CHR]	✓		✓
CHD4-[PHD-CHR]	✓		✓
CHD7-[CHR]	✓		✓
CREBBP	✓	✓	✓
EP300	✓		✓
HP1alpha	✓		✓

Melt Curve for BRD4-1 (His) Thermal Shift



Target	Compound	Melt Temp	Tm
BRD4-1 (His)	JQ1	57.5	9.5
	PFI1	53.5	5.5
	BET151	57.5	9.5
	DMSO	48	0

Reference Compound IC50 for BRD4 (AlphaScreen)



Continued on next page >

Reader Domain Assays

Epigenetic Assays

HTS & Profiling

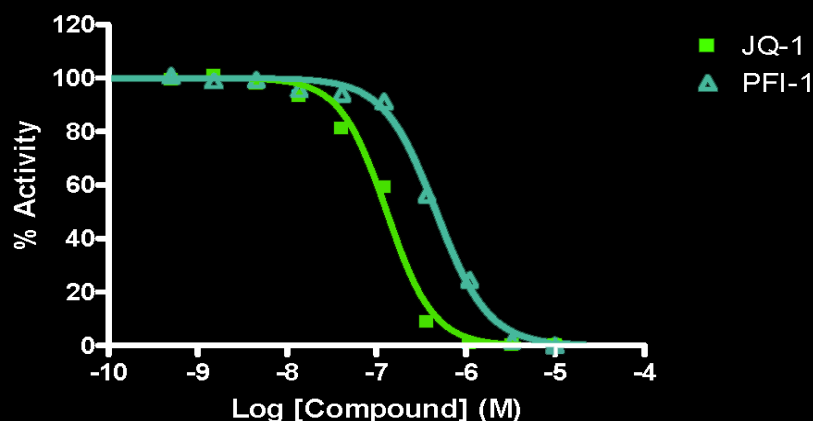
Alphascreen, Thermal Shift & ITC Assays Available

One Free Control Compound in Every Assay

Reader Domain Proteins (Available with GST or His tag)

Target	Thermal Shift	AlphaScreen	Protein Available
HP1 alpha-[CHR]	✓		✓
HP1 beta	✓	✓ *	✓
HP1 beta-[CHR]	✓	✓ *	✓
HP1 gamma	✓		✓
KAT2A	✓		✓
KAT2B	✓		✓
KAT5-2-[CHR]	✓		✓
KAT5-3-[CHR]	✓		✓
L3MBTL1	✓	✓ *	✓
MPP8-[CHR]	✓		✓
PB1-1	✓		✓
PB1-2	✓		✓
PB1-3	✓		✓
PB1-4	✓		✓
PB1-5	✓		✓
PB1-6	✓		✓
PHIP-2	✓		✓
PHIP-Tandem	✓		✓
SMARCA2a	✓	✓	✓
SMARCA2b	✓		✓
SMARCA4	✓	✓	✓
SP100	✓		✓
SP110C	✓		✓
SP140	✓	✓	✓
SP140L	✓	✓	✓
TAF1-1	✓		✓
TAF1-2	✓	✓	✓
TAF1L-1	✓		✓
TAF1L-2	✓		✓
TAF1L Tandem	✓		✓
TRIM24	✓		✓
TRIM28	✓		✓
TRIM33a	✓		✓
TRIM33b	✓		✓
TRIM66	✓		✓
UHRF1-[PHD]	✓	✓ *	✓
UHRF1-[SRA]	✓		✓
UHRF1-[TDR]	✓	✓ *	✓
UHRF1-[TDR-PHD]	✓	✓ *	✓
UHRF1-FL	✓	✓ *	✓

Reference Compound IC50 for BRDT-1 (AlphaScreen)



“ Thank you for the beautiful curves!
I am very comfortable with this data. ”

*No small molecule control is available

HDACs/HAT Assays

Epigenetic Assays

HTS & Profiling

One Free Control Compound in Every Assay

HDAC (Histone Deacetylase) Assays:

Target	Technology	Protein Also Available
HDAC1	Fluorescence Based	✓
HDAC2	Fluorescence Based	✓
HDAC3/NCOR2	Fluorescence Based	✓
HDAC4	Fluorescence Based	✓
HDAC5	Fluorescence Based	✓
HDAC6	Fluorescence Based	✓
HDAC7	Fluorescence Based	✓
HDAC8	Fluorescence Based	✓
HDAC9	Fluorescence Based	
HDAC10	Fluorescence Based	
HDAC11	Fluorescence Based	✓
HeLa Nuclear extracts	Fluorescence Based	✓

“

I am very happy with the dedication of the professional services provided by Reaction Biology. You guys are awesome!”

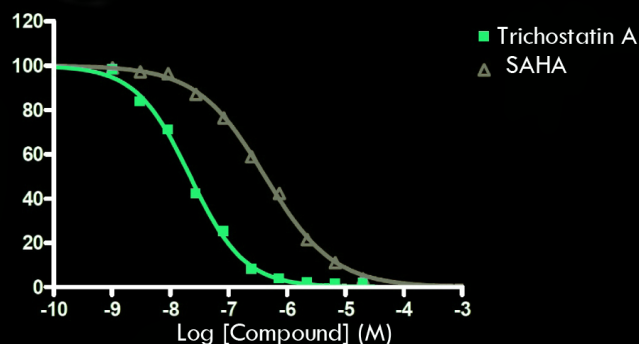
SIRT (Sirtuin) Assays:

Target	Technology	Protein Also Available
SIRT1	Fluorescence Based	✓
SIRT2	Fluorescence Based	✓
SIRT3	Fluorescence Based	
SIRT5	Fluorescence Based	✓

HAT (Histone Acetyltransferase) Assays:

Target	Technology
P300	Radioactivity Based
CBP	Radioactivity Based
hGCN5	Radioactivity Based
KAT5	Radioactivity Based
MYST2	Radioactivity Based
MYST4	Radioactivity Based
pCAF	Radioactivity Based

Reference Compound IC₅₀ for HDAC10



Additional Epigenetic Assays



Demethylase Assays

Target	Technology	Protein Available
KDM4A	Fluorescent	✓
KDM4D	Fluorescent	
KDM5A	Fluorescent	
KDM5B	Fluorescent	✓
KDM6B	Fluorescent	✓
LSD1	Fluorescent	✓

DUB (Deubiquitinase) Assays

Target	Technology
A20	Fluorescent
Ataxin3	Fluorescent
BAP1	Fluorescent
NEDP1	Fluorescent
SENP1	Fluorescent
UHL1	Fluorescent
UHL3	Fluorescent
USP10	Fluorescent
USP14	Fluorescent
USP2	Fluorescent
USP5	Fluorescent
USP8	Fluorescent

PARP Assays

Target	Technology	Protein Available
PARP1	Radioactivity	✓
PARP2	Radioactivity	✓
PARP5B	Radioactivity	

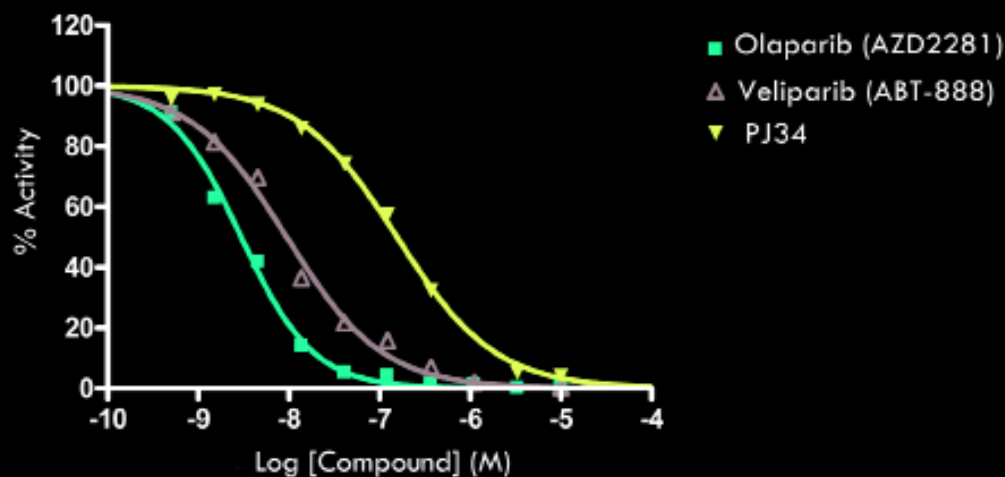
Isocitrate dehydrogenase (IDH) Assays

Target	Technology	
IDH1 R132C	Fluorescent	✓
IDH1 R132H	Fluorescent	✓
IDH1 WT	Fluorescent	✓
IDH2 R140Q	Fluorescent	✓
IDH2 R172Q	Fluorescent	✓
IDH2WT	Fluorescent	✓

Quinone Oxidoreductase (NQO) Assays

NQO1	Fluorescent	✓
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Reference Compound IC50 for PARP1



Protease Assays

HTS & Profiling

62 Targets & Growing

One Free Control Compound in Every Assay

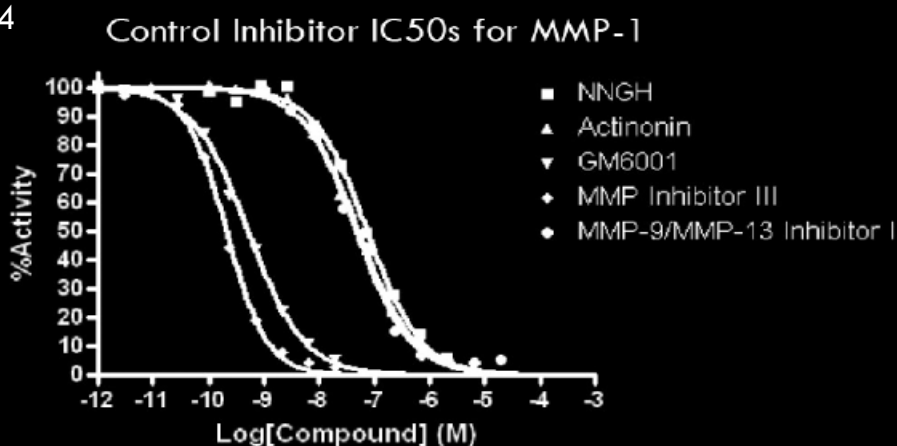


Proteases

ACE1
ACE2
ADAM10
BACE1
Calpain 1
Caspase 1
Caspase 2
Caspase 3
Caspase 4
Caspase 5
Caspase 6
Caspase 7
Caspase 8
Caspase 9
Caspase 10
Caspase 11
Cathepsin B
Cathepsin C
Cathepsin G
Cathepsin H
Cathepsin L
Cathepsin S
Cathepsin V
Chymase
Chymotrypsin
DPPIV
DPPVIII
DPPIX

DPPIX
Elastase
FVIIa
FXa
FXIa
HIV-1
Kallikrein 1
Kallikrein 5
Kallikrein 7
Kallikrein 12
Kallikrein 13
Kallikrein 14
MMP 1
MMP 2
MMP 3
MMP 7
MMP 8
MMP 9
MMP 10
MMP 12
MMP 13
MMP 14
Matriptase 2
Neprilysin
Papain
Plasma Kallikrein
Plasmin
Proteinase A

Proteinase K
TACE
Thrombin α
Trypsin
Tryptase b2
Tryptase g1
Urokinase



Additional Assays for Early Drug Discovery

HTS & Profiling

One Free Control Compound in Every Assay

Cytochrome P450s (CYPs)

Target	Technology
CYP 1A2	Fluorescent based
CYP 2C19	Fluorescent based
CYP 2C9	Fluorescent based
CYP 2D6	Fluorescent based
CYP 3A4	Fluorescent based

Phosphodiesterases (PDEs)

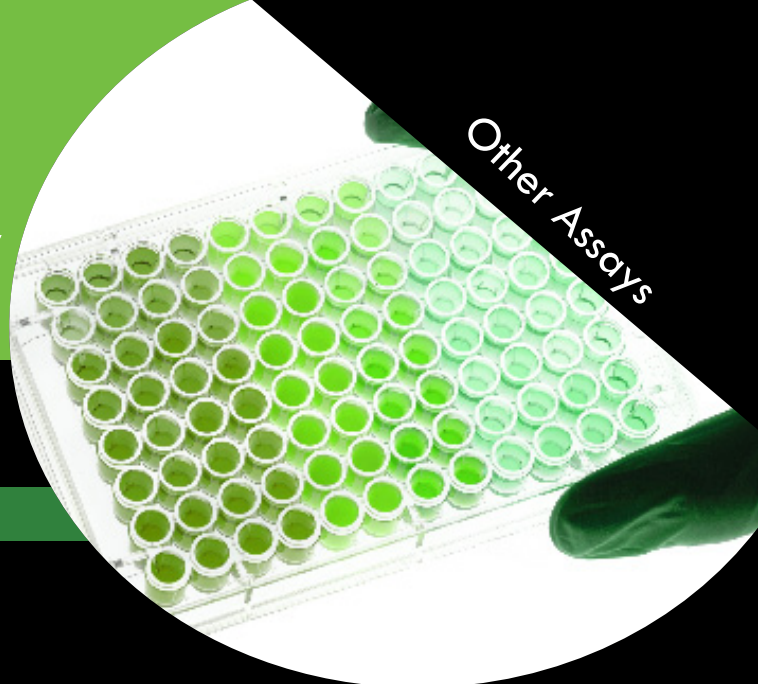
Target	Technology
PDE1A	Fluorescent based
PDE2A	Fluorescent based
PDE3A	Fluorescent based
PDE4A	Fluorescent based
PDE4B	Fluorescent based
PDE4C	Fluorescent based
PDE4D	Fluorescent based
PDE5A	Fluorescent based
PDE7A	Fluorescent based
PDE8A	Fluorescent based
PDE9A	Fluorescent based
PDE10A	Fluorescent based

Heat Shock Protein 90 (HSP90)

Target	Technology
HSP90a	Fluorescent based
HSP90b	Fluorescent based

hERG

Target	Technology
hERG	Fluorescent based



B-cell Lymphoma (BCL)

Target	Technology
Bcl-2	Fluorescent based
BCL-XL	Fluorescent based

Phosphatase

Target	Technology
PP1A	Fluorescent based
PP1B	Fluorescent based
PP2A alpha	Fluorescent based
PTPN1_PTP1B	Fluorescent based
PTPN2/TC-PTP	Fluorescent based
PTPN6_SHP1	Fluorescent based
PTPN7_LC-PTP	Fluorescent based
PTPN11_SHP2	Fluorescent based
PTPN12/PTP-PEST	Fluorescent based
PTPRC/CD45	Fluorescent based
DUSP22/MKPX	Fluorescent based

Inhibitor of Apoptosis Proteins (IAPs)

Target	Technology
cIAP-1	Binding Assay
cIAP-2	Binding Assay
XIAP	Binding Assay

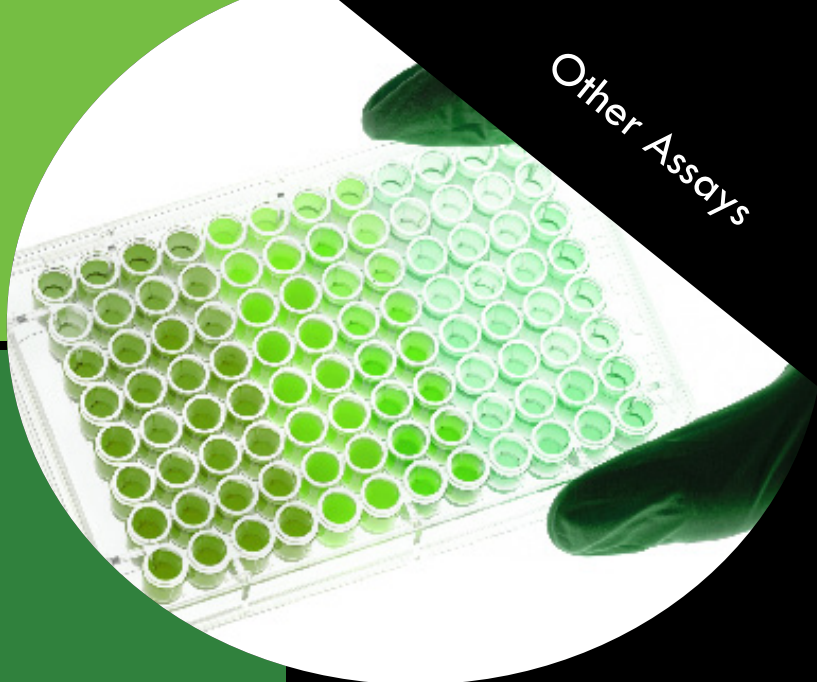
New Assays

Target	Technology
MTH1	Fluorescent based

Cell Assays

100+ Cell Lines

Other Assays



143B
U2OS Bone Carcinoma

BT474
BT-549
Hs 578Bst
Hs 578T
MCF-7
MDA-MB-157 Breast Cancer
MDA-MB-231
MDA-MB-361
MDA-MB-468
SK-BR-3
ZR-75-1

HeLa Cervical Cancer

HT-1080 Fibrosarcoma

DLD-1
HCT 116
HT-29
MIA PaCa-2 Gastrointestinal Cancer
Panc-1
SNU-16
SW480

A-253
Cal 27
DBTRG-05MG
Detroit 562
IMR-32
SCC-25
SCC-9
T98G
U87MG Head & Neck Cancer

Hep G2
Hep3B
PLC-PRF-5
SK-Hep-1
SNU-182
THLE-3 Liver Cancer

A-549
HCC-78
MSTO-211H
NCI-H441
NCI-H460 Lung Cancer

A-498 Kidney Cancer

BV-173
CMK
H-9
HC-1
HH
HL-60
HuT 78
HuT 102
Jurkat
K-562
KASUMI-2
Mino
MJ(G11)
MOLT-4
MV-4-11
NK-92
NOMO-1

Raji
REH
SUP-B15
SU-DHL-1
SU-DHL-6
SUP-T1
SZ-4
THP-1 Leukemia

KMS-11
MM.1S
RPMI 8226
U266 Myeloma

OVCAR-3
SK-OV-3 Ovarian Cancer

DU 145
LNCap
PC-3
22Rv1 Prostate Cancer

A-375 or A-375-P
A-431
DU4475
FaDu
MM127
SK-MEL-2
TE354.T
UACC-62 Skin Cancer

CCD1106
HDMEC
HEK-293
HGF-1
HOK
HPLF
HUVEC
MCF 10A
MRC-5
THLE-3
WI-38 Normal

Neuro-2a (N2a)
B16-F10
CHO-K1
Macrophage
NIH 3T3
NMuMG
PC-12
RIN-m5F
Sf9 Animal

Cell Assays

Other Assays

Cell Viability & Proliferation

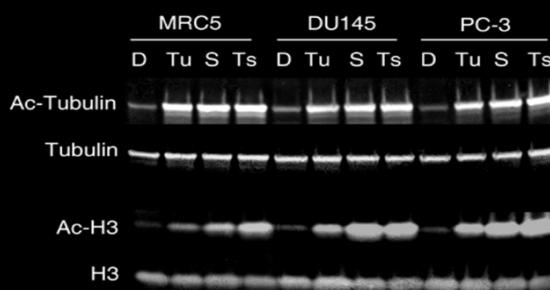
ATPlite
CellTiter-Glo® Luminescent
cyQuant
MTT
MTS
BrdU Assay
WST-8 assay

Cell Apoptosis

Apo-ONE® caspase 3/7
Mitochondrial Apoptosis Detection

Cell Phosphorylation

ELISA
Western Blot



HDAC Inhibitor Testing- Westernblot:

- 10uM Tubastatin A (Tu)
- 5uM SAHA (S)
- 1uM TSA (Ts)
- DMSO (D)

Cell Based Histone Methylation

AlphaLISA
ELISA (DELFI A)
Western Blot

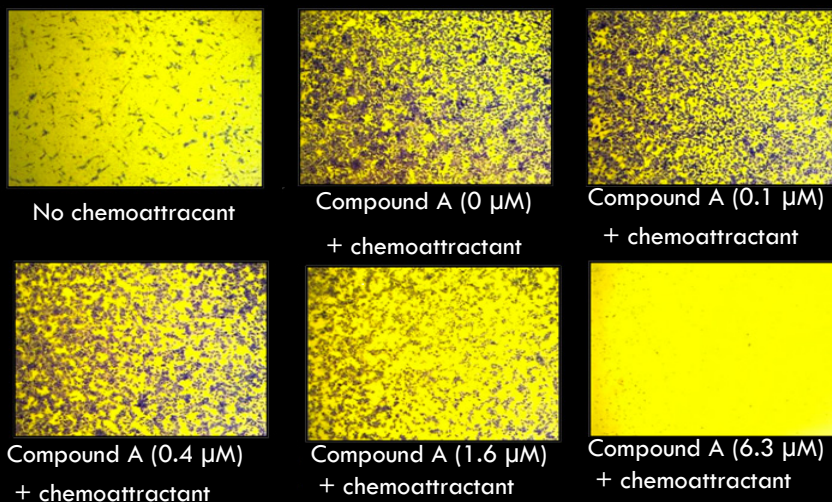
Cell Based Histone Acetylation

AlphaLISA
ELISA (DELFI A)
Western Blot

Protein Protein Interactions

NanoBRET Assay

Tumor Invasion Assay

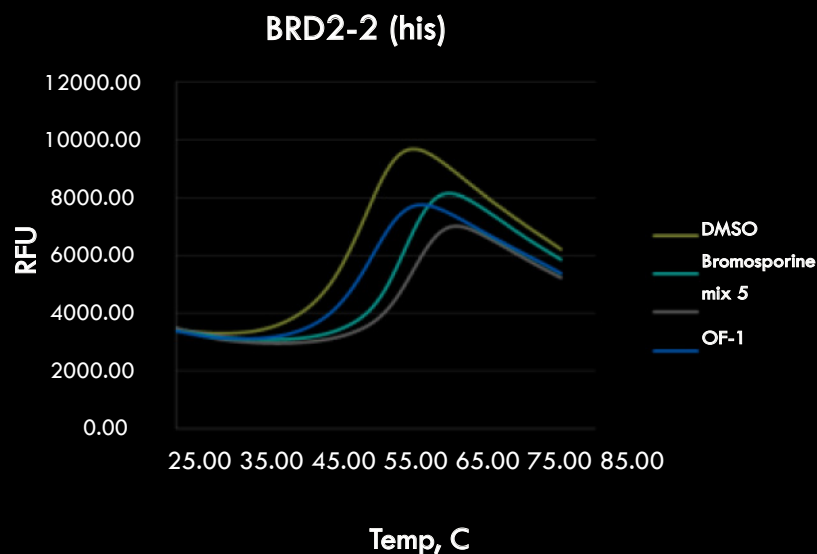
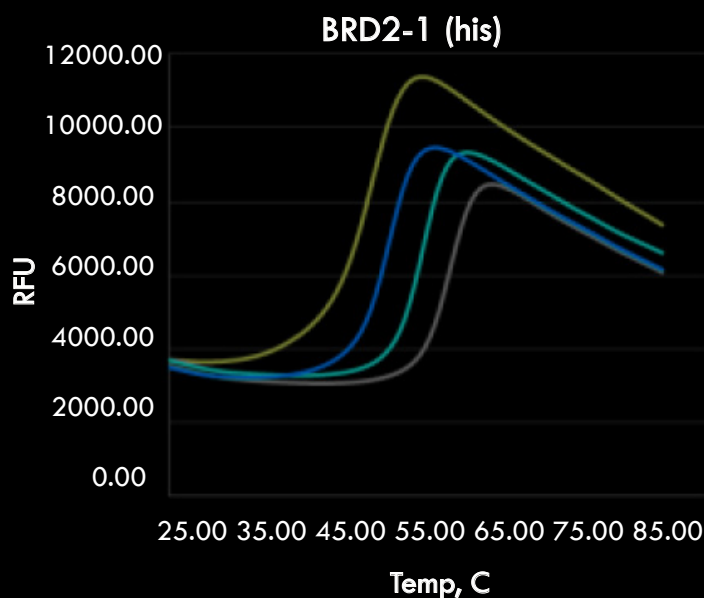


Thermal Shift Assays

Biophysical Assays

Test the selectivity of any compound against a wide range of reader domains in our thermal shift assays.

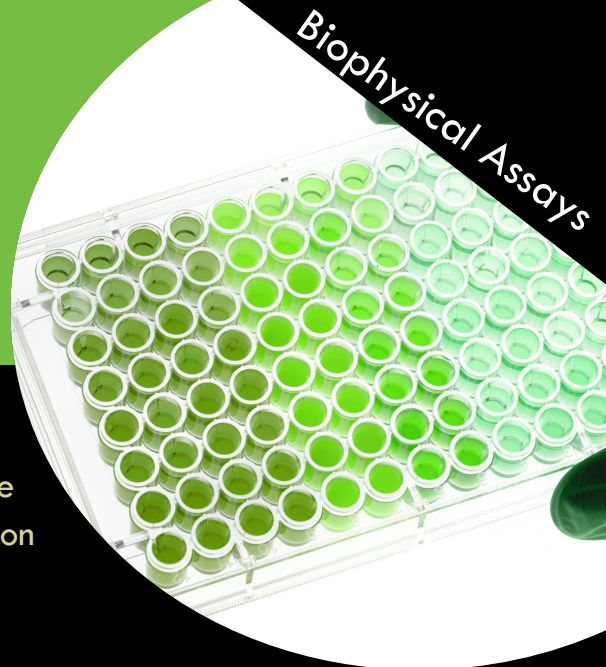
Extensive Coverage of the Reader Domain Family



		Tm	dTm
BRD2-1 (His)	DMSO	47.5	0
BRD2-1 (His)	Bromosporine	53.5	6
BRD2-1 (His)	mix 5	56.5	9
BRD2-1 (His)	OF-1	49.5	2
BRD2-2 (His)	DMSO	52	0
BRD2-2 (His)	Bromosporine	57.5	5.5
BRD2-2 (His)	mix 5	59	7
BRD2-2 (His)	OF-1	53	1
BRD2-Tndm (His)	DMSO	49	0
BRD2-Tndm (His)	Bromosporine	54	5
BRD2-Tndm (His)	mix 5	56	7
BRD2-Tndm (His)	OF-1	50	1

	1	2	3	4	5	6	7	8	9	10	11	12
A	color reference	Buffer blank	BRD2-1 (His)	BRD2-2 (His)	BRD2-Tndm (His)	ATAD2 (GST)	ATAD2 (His)	ATAD2B (His)	TAF1-1 (His)	TAF1-2 (GST)	TAF1-2 (His)	
B		CECR2 (GST)	BRD3-1 (His)	BRD3-2 (His)	BRD3-Tndm (His)	BRD1 (His)	BRD7 (GST)	BRD9 (His)	TAF11-1 (GST)	TAF11-1 (His)	TAF11-2 (His)	
C		BPTF-[PHD-BRD] (His)	BRD4-1 (His)	BRD4-2 (His)	BRD4-Tndm (His)	BRPF1a (His)	BRPF1b (His)	BRPF3 (His)	TAF11-Tndm (GST)	TAF1-Tndm (His)	PHIP-Tndm (GST)	
D		BP1F-[PHD-BRD] (GST)	BRD4-1 (GST)	BRD4-2 (GST)	BRD1-2 (GST)	BAZ2A (His)	BAZ2B (His)	SP100 (GST)	ASH1L-[BRD] (GST)	PB1-1 (GST)	PB1-2 (His)	
F		BPTF-[BRD] (His)	BRD1-1 (His)	BRD1-2 (His)	BRD1-Tndm (His)	SP100 (His)	SP110c (GST)	SP140 (His)	PB1-3 (His)	PB1-4 (His)	PB1-5 (His)	
I		BAZ1B (His)	BAZ1B (GST)	BAZ1B (His)	BRD8-1 (GST)	SP140L (His)	TRIM24 (His)	Buffer blank	PB1-6 (GST)	SMARCA2a (GST)	SMARCA2a (His)	
G		KAT2B (His)	BRD8-1 (His)	BRWD1-2 (His)	BRWD3-2 (GST)	TRIM33a (GST)	TRIM33a (His)	TRIM28 (GST)	SMARCA2b (GST)	SMARCA4 (GST)	SMARCA4 (His)	
H		KAT2B (GST)	CREBBP (His)	EP300 (His)	PHIP-2 (His)	TRIM33b (His)	TRIM66 (His)	TRIM28 (His)	BAZ1A (His)	Buffer	GST alone	
		Sublibrary 1	Sublibrary 2	Sublibrary 3		Sublibrary 4	Sublibrary 5	Sublibrary 6	Sublibrary 7	Sublibrary 8		

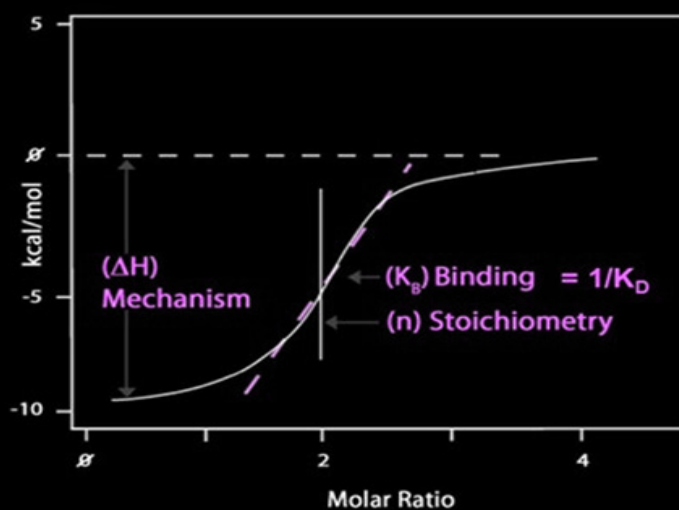
ITC Assays



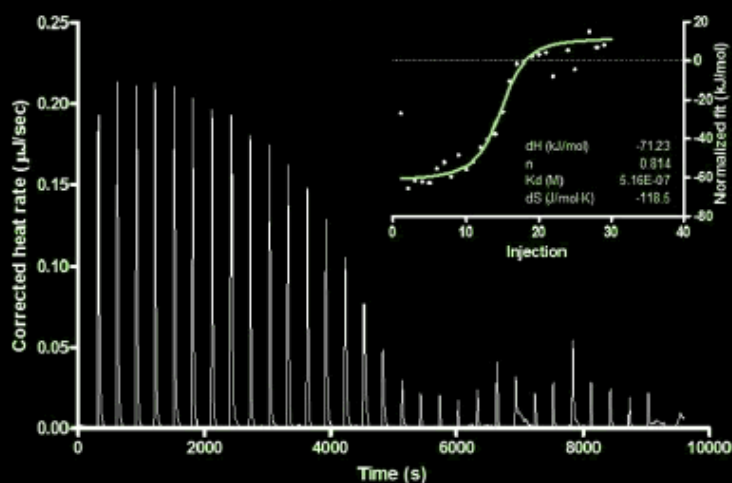
Isothermal Titration Calorimetry (or ITC) assays provide a complete thermodynamic profile of the interaction of molecules free in solution without modifications, tags, or coupling to a surface.

With ITC technology, RBC provides:

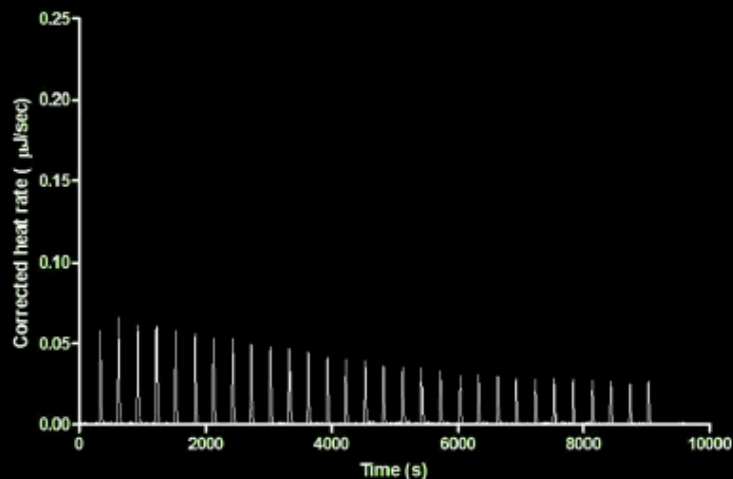
- Equilibrium binding affinity (K_a)
- Binding stoichiometry
- Enthalpy of binding ΔH
- Entropy (ΔS), free energy of binding (ΔG), and dissociation constant (K_d) by extension



BRD4-1 vs JQ1



BRD4-1 vs CBP-112



SPR Assays

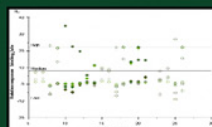
Biophysical Assays

SPR Assays (or Surface Plasmon Resonance) measure biomolecular interactions, including small molecules/protein and protein/protein interactions.

Reaction Biology is equipped with the state of the art Biacore 8K instrument with high throughput capability.

With the new Biacore 8K SPR platform, RBC provides:

- High throughput fragment library screening
- Kinetics and affinity determination
- Binding site mapping and competition analysis
- Specificity determination
- Antibody characterization



Screening

Does it bind?

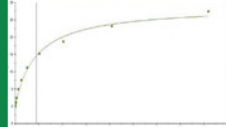
>2300 samples/24h



Specificity

Is it specific for my target?

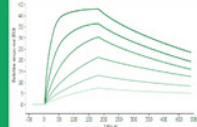
8 targets/run



Affinity

How strong is the binding?

64 samples/5h

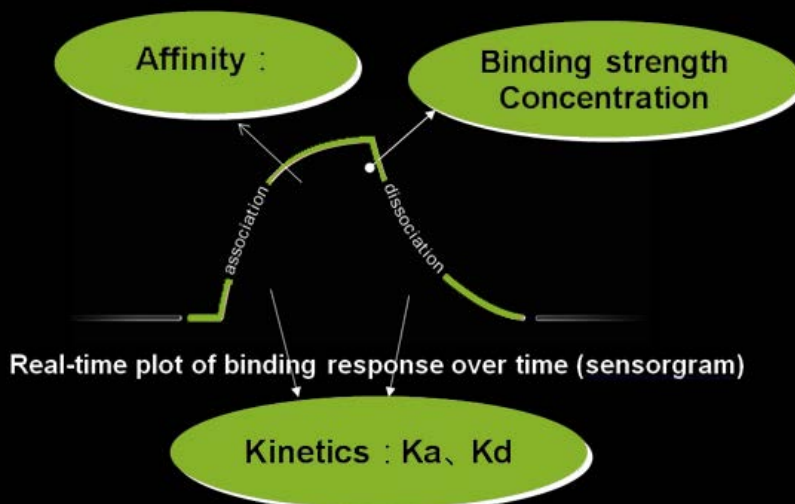


Kinetics

How fast does it bind and dissociate?
64 samples/5h



Competition screen/binding site mapping
Where does it bind?
> 1000 samples/24h



With the largest functional kinase activity assay panel in the industry, RBC provides kinase, epigenetic, and other profiling services to over 700 clients worldwide. RBC specializes in custom assay conditions, high quality reproducible data, and outstanding service.

Quality Data. Quality Support.

“Reaction Biology feels like a family company to me but is a big company in a good way. I feel like a person, a client and am treated 1st class. However, I get results that are of the highest professional standard, worthy of a bigger corporation. I feel that big companies treat you as a “number”, churn out data and forget about you once the invoice has been settled. With you, it’s like I know you all personally and you always have time to respond to queries and are very friendly”

“It is always a pleasure to work with all of you! Your service has always been very reliable (and affordable!) in the past years. It is amazing to see how RBC grows bigger and stronger over the years!”

“I really appreciate the quick turnaround time from your team in generating a quote for us! (We were in the midst of grant preparation for the next phase of our project.)”

“Thanks for getting the results to my client in such a timely way.
They were also impressed with the speed”

“To the Reaction Biology team,
Many thanks for the high quality dataset and the rapid turnaround time. The data was received well.”

“Thank you very much for the data. It caused so much excitement I forgot to thank you!
The results are very consistent with data you generated previously.”

“I am currently working with the EZH2 complex that I got from your company. It is beautifully working in my in vitro assay and is a very pure prep.”

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