

Functional Target Validation Screening List

Note: Assays are with either:

- (a) **Proprietary biosensors (fluorescent tag), or**
- (b) **Commercially available methods with the option of creating specific biosensors.**

Category	Type	Test	Method
Apoptosis	Caspase activity	Caspase 3 activity	Proprietary biosensor
Apoptosis	Caspase activity	Caspase 8 activity	Proprietary biosensor
Apoptosis	Caspase activation	Caspase 3.7 activation	Caspa Tag
Apoptosis	Caspase activation	Caspase 9 activation	Caspa Tag
Apoptosis	Caspase activation	Caspases (pan-caspase)	Capscreen
Apoptosis	Caspase activation	Caspases (all)	Caspa Tag
Apoptosis	Caspase activation	Cleaved caspase 3	Immunocytometry
Apoptosis	Caspase activation	Cleaved caspase 7	Immunocytometry
Apoptosis	Caspase activation	Cleaved caspase 8	Immunocytometry
Apoptosis	Caspase activation	Cleaved caspase 9	Immunocytometry
Apoptosis	Mitochondrial Function	Cytochrome C release	Immunocytometry
Apoptosis	Mitochondrial Function	Mitochondrial potential	Assay
Apoptosis	DNA cleavage	TUNEL	Apop Tag
		Cleaved PARP, Bcl-2, Active Caspase-3	Assay
Apoptosis	Apoptosis Cascade	Activated BAX	Immunocytometry
Apoptosis	Apoptosis Cascade	Activated Bak	Immunocytometry
Apoptosis	Apoptosis Cascade	p53	Immunocytometry
Apoptosis	Apoptosis Cascade	TRAF1	Immunocytometry
Apoptosis	Apoptosis Cascade	Calpain activity	Proprietary biosensor
Apoptosis	Cytolysis	Membrane integrity	Assay
Apoptosis	Cell cycle	Cell cycle analysis	Assay
Proliferation	Proliferation	Proliferation	Assay
Transcription regulators	Expression level	c-fos	Immunocytometry
Transcription regulators	Expression level	c-jun	Immunocytometry
Transcription regulators	Nuclear translocation	NFkB p65	Immunocytometry
Transcription regulators	Nuclear translocation	Nfkb p50	Immunocytometry
Transcription regulators	Nuclear translocation	Stat 5 activation	Immunocytometry
Transcription regulators	Nuclear translocation	Glucocorticoid receptor	Western blot
Transcription regulators	Nuclear translocation	Glucocorticoid receptor	Nuclear translocation assay
Transcription regulators	Nuclear translocation	Stat5 nuclear translocation	Nuclear translocation assay
Transcription regulators	Nuclear translocation	Erk nuclear translocation	Nuclear translocation assay
Transcription regulators	Phosphorylation	c-jun phosphorylated	Nuclear translocation assay
Transcription regulators	Phosphorylation	NFkB p65 phosphorylated	Nuclear translocation assay
Transcription regulators	Phosphorylation	Stat 1 phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	Stat 3 phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	Stat 5 phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	Stat 6 phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	Smad 1/5/8 phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	CREB phosphorylated	Immunocytometry
Transcription regulators	Phosphorylation	Smad 1/5/8 phosphorylated	Immunocytometry

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Signaling cascade	Expression level	PP2A A subunit	Immunocytometry
Signaling cascade	Expression level	PP2A B subunit	Immunocytometry
Signaling cascade	Expression level	PP2A C subunit	Immunocytometry
Signaling cascade	Expression level	HSP 70	Immunocytometry
Signaling cascade	Expression level	HSP 90	Immunocytometry
Signaling cascade	Expression level	IkB	Immunocytometry
Signaling cascade	Expression level	JNK 1	Immunocytometry
Signaling cascade	Expression level	JNK 2	Immunocytometry
Signaling cascade	Expression level	Raf 1	Immunocytometry
Signaling cascade	Expression level	RafB	Immunocytometry
Signaling cascade	Expression level	Akt 1	Immunocytometry
Signaling cascade	Expression level	GSK 3	Immunocytometry
Signaling cascade	Expression level	p44/p42 MAPK	Immunocytometry
Signaling cascade	Expression level	p44/p42 MAPK phosphorylated	Immunocytometry
Signaling cascade	Expression level	PKC-alpha	Immunocytometry
Signaling cascade	Expression level	PKC-alpha	Immunocytometry
Signaling cascade	Expression level	ErbB3	Immunocytometry
Signaling cascade	Expression level	ErbB4	Immunocytometry
Signaling cascade	Expression level	Cox 1	Immunocytometry
Signaling cascade	Expression level	Cox 2	Immunocytometry
Signaling cascade	Expression level	NOS 2	Immunocytometry
Signaling cascade	Expression level	IP3 receptor	Immunocytometry
Signaling cascade	Expression level	Best-arrestin 2	Immunocytometry
Signaling cascade	Expression level	Cathepsin D	Immunocytometry
Membrane receptors	Expression level	ErbB3	Immunocytometry
Membrane receptors	Expression level	ErbB4	Immunocytometry
Membrane receptors	Expression level	NGF receptors Trk-A	Immunocytometry
Membrane receptors	Expression level	NGF receptors p75	Immunocytometry
Membrane receptors	Expression level	Nicotinic AchR alpha	Immunocytometry
Membrane receptors	Expression level	Opioid receptor omega	Immunocytometry
Membrane receptors	Expression level	Nicotinic AchR beta	Immunocytometry
Membrane receptors	Expression level	Adenosine A2A receptor	Immunocytometry
Membrane receptors	Expression level	mGluR7	Immunocytometry
Membrane receptors	Expression level	NGF receptors Trk-C	Immunocytometry
Membrane receptors	Expression level	NGF receptors p75	Immunocytometry
Membrane receptors	Expression level	Somatostatin receptor 2	Immunocytometry
Membrane receptors	Expression level	Somatostatin receptor 5	Immunocytometry
Neurodegeneration	Model	Parkinson disease model	Primary mesencephalic cultures
Neurodegeneration	Model	Alzheimer disease model	Primary mesencephalic cultures
Neurodegeneration	Model	Neurotoxicity	Primary mesencephalic cultures
Neurodegeneration	Model	Amyloid peptide secretion	Neuronal model/ flow cytometry

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Neurodegeneration	Model	y secretase activity	Proprietary biosensor
Neurodegeneration	Expression level	Akt 1	Immunocytometry
Neurodegeneration	Expression level	GSK 3	Immunocytometry
Neurodegeneration	Expression level	Beta amyloid peptide	Immunocytometry
Neurodegeneration	Expression level	APP	Immunocytometry
Neurodegeneration	Expression level	BACE	Immunocytometry
Neurodegeneration	Expression level	Presenilin 1	Immunocytometry
Neurodegeneration	Expression level	Presenilin 2	Immunocytometry
Neurodegeneration	Expression level	Notch 1	Immunocytometry
Neurodegeneration	Expression level	Tau protein	Immunocytometry
Neurodegeneration	Expression level	Vimentin	Immunocytometry
Neurodegeneration	Expression level	Apolipoprotein E	Immunocytometry
Neurodegeneration	Expression level	Fas	Immunocytometry
Neurodegeneration	Expression level	JNK 1	Immunocytometry
Neurodegeneration	Expression level	JNK 2	Immunocytometry
Neurodegeneration	Expression level	Prion protein Prp	Immunocytometry
Neurodegeneration	Expression level	Huntingtin	Immunocytometry
Neurodegeneration	Expression level	Ubiquitin	Immunocytometry
Neurodegeneration	Expression level	Adt 1 phosphorylated	Immunocytometry
Neurobiology	Expression level	SNAP 25	Immunocytometry
Neurobiology	Expression level	PSD 95	Immunocytometry
Neurobiology	Expression level	GFAP	Immunocytometry
Neurobiology	Expression level	Synaptophysin	Immunocytometry
Neurobiology	Expression level	Neurothelin	Immunocytometry
Neurobiology	Expression level	Potassium channel KV 1.3	Immunocytometry
Neurobiology	Expression level	Tyrosine hydroxylase	Immunocytometry
Neurobiology	Expression level	NCAM	Immunocytometry
Cytotoxicity	Multi-parametric analysis	Use of many availabel cell lines	Flow cytometry
Target validation	functional activity	Protein over-expression	Transfection
Target validation	functional activity	Protein repression	SiRNA
Multiplexing	functional activity	Apoptosis / cell cycle	Multi-parametric analysis
Multiplexing	functional activity	Apoptosis / proliferation	Multi-parametric analysis
Multiplexing	functional activity	Apoptosis / cytosis	Multi-parametric analysis
Multiplexing	functional activity	Proliferation / mitochondrial potential	Multi-parametric analysis
Multiplexing	functional activity	Cell cycle / proliferation	Multi-parametric analysis
Multiplexing	functional activity	Cytolysis / proliferation	Multi-parametric analysis
Multiplexing	functional activity	Cytolysis / cell cycle	Multi-parametric analysis
Multiplexing	functional activity	Esterases / proliferation	Multi-parametric analysis
Multiplexing	functional activity	Esterases / cell cycle	Multi-parametric analysis
Multiplexing	functional activity	Esterases / cytolysis	Multi-parametric analysis