

PowerPlex® STR Multiplexes

More Loci. More Choices. More Information.

The Power to Solve... *from Sample to Analysis*

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PowerPlex® STR Systems

You have many options when choosing DNA-typing reagents, so we've made it easy for you to find the right STR analysis kit for your needs. There are STR amplification systems for your forensic, paternity and relationship-testing applications that meet global and regional database requirements, including kits that amplify the European Standard Set (ESS), CODIS and other relevant loci.

		PowerPlex® 35GY 8C System—COMING SOON!	PowerPlex® Fusion 6C System	PowerPlex® Fusion System	PowerPlex® ESI Fast and ESX Fast Systems	PowerPlex® 21 System	PowerPlex® 18D System	PowerPlex® Y23 System
		35 loci	27 loci	24 loci	16 or 17 loci	21 loci	18 loci	23 loci
ESS/CODIS Loci	D1S1656	•	•	•	•	•		
	D2S441	•	•	•	•	•		
	D2S1338	•	•	•	•	•	•	
	D3S1358	•	•	•	•	•	•	
	D8S1179	•	•	•	•	•	•	
	D10S1248	•	•	•	•	•		
	D12S391	•	•	•	•	•		
	D16S539	•	•	•	•	•	•	
	D18S51	•	•	•	•	•	•	
	D19S433	•	•	•	•	•	•	
	D21S11	•	•	•	•	•	•	
	D22S1045	•	•	•	•	•		
	FGA	•	•	•	•	•	•	
	TH01	•	•	•	•	•	•	
	vWA	•	•	•	•	•	•	
CODIS Loci	D5S818	•	•	•		•	•	
	D7S820	•	•	•		•	•	
	D13S317	•	•	•		•	•	
	CSF1PO	•	•	•		•	•	
	TPOX	•	•	•		•	•	
Other Loci	Amelogenin	•	•	•	•	•	•	
	Penta D	•	•	•		•	•	
	Penta E	•	•	•		•	•	
	SE33	•	•		ES/ESX 17 only			
	D6S1043					•		
Y-STR Loci	DYS19							•
	DYS385a/b	•						•
	DYS389I							•
	DYS389II							•
	DYS390	•						•
	DYS391		•	•				•
	DYS392							•
	DYS393							•
	DYS437							•
	DYS438	•						•
	DYS439							•
	DYS448	•						•
	DYS456	•						•
	DYS458	•						•
	DYS481	•						•
	DYS533							•
	DYS549							•
	DYS570		•					•
	DYS576		•					•
	DYS635	•						•
	DYS643	•						•
	Y-GATA-H4							•

PowerPlex® STR Multiplexes

PowerPlex® Systems Specifications

		Fusion 6C	Fusion	ESX & ESI Fast	21	18D	Y23
Number of Loci		27	24	16/17	21	18	23
Number of Colors		6	5	5	5	5	5
Probably of Identity (N=1036)**		2.30×10^{-32}	6.58×10^{-29}	2.80×10^{-20} 1.85×10^{-22}	6.77×10^{-27}	8.92×10^{-22}	N/A
Capillary Electrophoresis Instrument Compatibility	ABI31XX	yes	yes	yes	yes	yes	yes
	ABI35XX	yes	yes	yes	yes	yes	yes
	Spectrum CE	yes	yes	yes	yes	yes	yes
	Spectrum Compact CE	yes	yes	yes	yes	yes	yes
Matrix		DG4900	DG4850	DG4850	DG4850	DG4850	DG4850
Direct Amp Compatible		yes	yes	yes	yes	yes	yes
Optimal Number* of PCR Cycles for Direct Amplification		1 punch in 12.5µl reaction/25 cycles*	1-2 punches/ 25-28 cycles	1-2 punches/ 25-27 cycles	1-2 punches/ 24-27 cycles	1-2 punches/ 26-29 cycles	1-2 punches/ 25-29 cycles
		2ul Swab extract in 12.5µl reaction/ 25 cycles*	2ul Swab extract/ 25-28 cycles	2ul Swab extract/ 25-27 cycles	2ul Swab extract/ 24-27 cycles	2ul Swab extract/ 26-28 cycles	2ul Swab extract/ 26* cycles
Optimal Amount of Template DNA in 25µl reaction		1ng/ 29 cycles	0.5ng/ 30 cycles	0.5ng/ 30 cycles	0.5ng/ 30 cycles	Direct Amplification Only	0.5ng/ 30 cycles
Maximum Volume of Sample in 25µl reaction		15µl	15µl	17.5µl	15µl	15µl	17.5µl
Thermal Cycler***	9700	Max	Max	Max	Max	9600	Max
	Veriti	100%	100%	100%	100%	100%	100%
	ProFlex	9700	9700	9700	9700	9700	9700
Ramp Speed given in "Mode"		Max Mode 100% (Veriti)	Max Mode	Max Mode	Max Mode	9600 Mode	Max Mode
Ramp Speed in °C per second		5	5	5	5	1	5
Approximate Amp Time	Direct Amp	55 min	80 min	45 min	85 min	90 min	95 min
	Casework	60 min	85 min	50 min	90 min	N/A	100 min
Kit Sizes		50rxn (100 direct amp) 200rxn (400 direct amp)	200rxn 800rxn	100rxn 400rxn	200rxn 800rxn	200rxn 800rxn	50rxn 200rxn

*May require optimization.

**Reference:Butler, J.M., Hill, C.R. and Coble, M.D. Variability of new STR loci and kits in US population groups. Profiles in DNA <https://www.promega.com/resources/profiles-in-dna/2012/variability-of-new-str-loci-and-kits-in-us-population-groups/> Published 2012. Accessed April, 2012.

***Applied Biosystems Veriti Thermal Cycler, Applied Biosystems ProFlex PCR System, GeneAmp® PCR System 9700

The Power to Solve...from Sample to Analysis

DNA Isolation

Maxwell® FSC Instrument

A compact, plug-and-play instrument for automated DNA extraction

Maxwell® RSC 48 Instrument

Compact, automated nucleic acid purification platform that processes up to 48 samples simultaneously to yield high-quality nucleic acids

Maxwell® FSC DNA IQ™ Casework Kit

Optimal extraction of DNA from forensic casework samples

Casework Extraction Kit

Preprocessing reagents to assist in DNA IQ™ chemistry extraction of DNA from challenging samples

DNA IQ™ System

Manual and large platform automatable purification of DNA free of PCR inhibitors

Differex™ System

Easy separation of sperm and epithelial fractions

Casework Direct Kit, Custom

Rapid screening of sexual assault evidence and processing of Touch DNA samples prior to quantification of human DNA using the PowerQuant® System and amplification using PowerPlex® Systems

Quantification

Plexor® HY System

Quantitative PCR for both total human and male DNA in a single reaction

PowerQuant® System

A 5-dye, 4-target hydrolysis probe-based quantitative PCR assay for assessing total human and male DNA concentrations, degradation levels and the presence of inhibitors

STR Amplification

STR Amplification

PowerPlex® Fusion System

A rapid 24-plex suitable for casework, paternity and database testing and designed to meet the new CODIS recommendations

PowerPlex® Fusion 6C System

A rapid 27-plex, including SE33, suitable for casework and databasing testing and designed to meet the new CODIS recommendations

PowerPlex® Y23 System

Male-specific STR genotyping kit with 23 Y-STR loci; includes protocols for both casework and databasing

PowerPlex® ESX and ESI Fast System

Rapid human identification STR assays that meet ENFSI recommendations for use in casework, paternity and database testing

PowerPlex® 35GY 8C System*

An 8-color multiplex containing autosomal and Y-STR loci designed for use on the Spectrum CE System

Analysis

Spectrum CE System*

8- or 24-capillary electrophoresis instrument that combines state-of-the-art STR analysis with increased run flexibility and 4-plate capacity

Spectrum Compact CE System*

Benchtop, 4-capillary electrophoresis instrument capable of Sanger sequencing and fragment analysis

Massively Parallel Sequencing

Massively Parallel Sequencing

PowerSeq™ 46GY System*

Massively parallel sequencing of autosomal and Y STR loci in a single assay on an Illumina MiSeq® platform

PowerSeq™ CRM Nested System, Custom

Massively parallel sequencing of control region of mitochondrial genome using a nested amplification protocol

MPS Library Quantification

PowerSeq™ Quant MS System

Quantification of prepared MPS libraries for Illumina platforms, enabling efficient pooling and flow cell representation

 **Identity Automation™**: Fully developed and tested high-throughput solutions with Promega installation, training and support.

 **Direct Amp Compatible**

*Product in development

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