

# Investigator<sup>®</sup> STR Kits for Human Identification

The QIAGEN portfolio of STR multiplex PCR kits offers the most comprehensive and versatile coverage of current international STR standards for capillary electrophoresis analysis. These include the European Standard Set (ESS), Combined DNA Index (CODIS), other non-standard loci and unique gonosomal loci. The kits are well suited for use in molecular forensics, paternity and kinship analyses, as well as cell line identification. The following tables summarize the kit markers by standard and dye color.

**Table 1. Markers of the Investigator STR PCR Kits by international standard; loci of the ForenSeq<sup>®</sup> MainstAY (SE) Kit for targeted sequencing are included for comparison**

	24plex-Q5 Kit	24plex-GO1 Kit	26plex-Q5 Kit	ESSplex-SE-Q5 Kit	IDplex-Plus Kit	Triplex-AFS-Q5 Kit	HDplex Kit	Argus-X-12-Q5 Kit	Argus-Y-28-Q5 Kit	MainstAY (SE) Kit									
<b>Amelogenin</b>	AM	AM	AM	AM	AM	AM	AM			AM									
<b>Quality Sensor</b>	QS1, QS2	QS1, QS2	QS1, QS2		QS		QS	QS1, QS2											
<b>International Standards</b>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-bottom: 5px;">20 CODIS core loci (Hares, 2015)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">12 ESS core loci</div> </div>																		
D1S1656											D1S1656	D1S1656							D1S1656
D2S441											D2S441	D2S441							D2S441
D10S1248											D10S1248	D10S1248							D10S1248
D12S391											D12S391	D12S391			D12S391				D12S391
D22S1045											D22S1045	D22S1045							D22S1045
D3S1358											D3S1358	D3S1358	D3S1358						D3S1358
D8S1179											D8S1179	D8S1179	D8S1179						D8S1179
D18S51											D18S51	D18S51	D18S51		D18S51				D18S51
D21S11											D21S11	D21S11	D21S11			D21S11			D21S11
TH01											TH01	TH01	TH01						TH01
vWA											vWA	vWA	vWA						vWA
FGA											FGA	FGA	FGA	FGA					FGA
D2S1338											D2S1338	D2S1338	D2S1338						D2S1338
D19S433											D19S433	D19S433	D19S433						D19S433
D16S539											D16S539	D16S539	D16S539						D16S539
D5S818											D5S818		D5S818						D5S818
D7S820											D7S820		D7S820						D7S820
D13S317											D13S317		D13S317						D13S317
CSF1PO											CSF1PO		CSF1PO						CSF1PO
TPOX	TPOX		TPOX						TPOX										
<b>Additional loci</b>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-bottom: 5px;">20 CODIS core loci (Hares, 2015)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">12 ESS core loci</div> </div>																		
SE33												SE33		SE33	SE33				(SE33)
DYS391											DYS391						DYS391		DYS391
											D6S1043								D6S1043
											Penta D								Penta D
											Penta E								Penta E
															D2S1360	DXS7132			D4S2408 D17S1301
															D3S1744	DXS7423			D9S1122 D20S482
															D4S2366	DXS8378	DYS19	DYS456	DYS19
															D5S2500	DXS10074	DYS385*	DYS458	DYS385*
															D6S474	DXS10079	DYS389-I	DYS460	DYS389-I
															D7S1517	DXS10101	DYS389-II	DYS481	DYS389-II
															D8S1132	DXS10103	DYS390	DYS518	DYS390
															D10S2325	DXS10134		DYS533	DYS533
															D21S2055	DXS10135	DYS392	DYS549	DYS392
																DXS10146	DYS393	DYS570	DYS393
																DXS10148	DYS437	DYS576	DYS437
																HPRTB	DYS438	DYS627	DYS438
																	DYS439	DYS643	DYS439
																	DYS448	YGATAH4	DYS448
							DYS449		DYS449										
									DYS505										
									DYS522										
									DYS612										
									DYF387S1*										
									DYS635										

\* duplicated locus; Please check www.fbi.gov for NDIS approved kits.

**Table 2. Autosomal STR markers of the Investigator Human Identification PCR Kits by dye color**

Locus	Chromosomal mapping	Label dye						
		Investigator 2Aplex Q5 Kit	Investigator 24plex GO1 Kit	Investigator 26plex Q5 Kit	Investigator ES5plex SE Q5 Kit	Investigator 1Dplex Plus Kit	Investigator HDplex Kit	Investigator Triplex AF5 Q5 Kit
Amelogenin	Xp22.1–22.3, Yp11.2	6-FAM™	6-FAM	6-FAM	6-FAM	6-FAM	6-FAM	6-FAM
QS1		BTP	BTP	6-FAM				6-FAM
D1S1656	1q42	BTG	BTG	BTG				
D2S441	2p14	BTR2	BTR2	BTR				
D2S1338	2q35	BTY	BTY	BTY	BTG			
D3S1358	3p25.3	6-FAM	6-FAM	6-FAM	6-FAM			
D2S1360	2p24-p22						6-FAM	
D3S1744	3p24						6-FAM	
D4S2366	4p16-15.2						6-FAM	
D5S2500	5q11.2						BTG	
D5S818	5q23.2	BTP	BTP		BTG			
D6S474	6q21-22						6-FAM	
D6S1043	6q16.1		6-FAM					
D7S820	7q21.11	BTP	BTP		BTG	BTG		
D7S1517	7q31.33						6-FAM	
D8S1132	8q23.1						BTG	
D8S1179	8q23.1–23.2	BTY	BTY	BTY	BTR			
D10S1248	10q26.3	BTY	BTY	BTY				
D10S2325	10p12						BTY	
D12S391	12p13.2	BTG	BTG	BTY			6-FAM	
D13S317	13q31.1	BTP	BTP		BTY			
D16S539	16q24.1	BTP	BTP	BTG	BTY			
D18S51	18q21.3	BTR2	BTR2	BTR	BTR	BTG		
D19S433	19q12	BTY	BTY	BTG	BTG			
D21S11	21q21.1	6-FAM	6-FAM	6-FAM	6-FAM			
D21S2055	21q22						BTG	
D22S1045	22q12.3	BTY	BTY	BTY				
FGA (FIBRA)	4q28.2	BTR2	BTR2	BTR	BTR			6-FAM
SE33 (ACTBP2)	6q14.2	BTG		BTG		BTY		6-FAM
TH01 (TC11)	11p15.5	6-FAM	6-FAM	6-FAM	6-FAM			
vWA	12p13.31	6-FAM	BTR2	6-FAM	6-FAM			
TPOX	2p25.3	BTG	BTG		BTG			
CSF1PO	5q33.1	BTP	BTP		BTY			
DYS391	Yq11.21	BTG	BTG					
Penta D	21q22.3		6-FAM					
Penta E	15q26.2		BTG					
QS2		BTP	BTP	6-FAM				

**Table 3. X-chromosomal STR markers of the Investigator Argus X-12 QS Kit by dye color**

Investigator Argus X-12 QS Kit

Locus	Chromosomal mapping	Label dye
Amelogenin	Xp22.1–22.3, Yp11.2	6-FAM™
QS1	—	6-FAM
DXS7132	Xq11.2	BTG
DXS7423	Xq28	BTY
DXS8378	Xp22.31	6-FAM
DXS10074	Xq12	BTG
DXS10079	Xq12	BTY
DXS10101	Xq26.2	6-FAM
DXS10103	Xq26.2	6-FAM
DXS10134	Xq28	6-FAM
DXS10135	Xp22.31	BTG
DXS10146	Xq28	BTY
DXS10148	Xp22.31	BTR
HPRTB	Xq26.2	BTR
D21S11	21q21.1	BTR

**Table 4. Y-chromosomal STR markers of the Investigator Argus Y-28 QS Kit by dye color**

Investigator Argus Y-28 QS Kit

Locus	Label dye
QS1	BTP
DYS19	BTG
DYS385*	BTP
DYS389-I	6-FAM
DYS389-II	6-FAM
DYS390	6-FAM
DYS391	6-FAM
DYS392	BTP
DYS393	BTG
DYS437	BTG
DYS438	BTR2
DYS439	BTR2
DYS448	BTY
DYS449	BTG
DYS456	BTR2
DYS458	BTG
DYS460	BTY
DYS481	BTY
DYS518	BTY
DYS533	6-FAM
DYS549	BTR2
DYS570	BTP
DYS576	BTY
DYS627	6-FAM
DYS635	BTP
DYS643	BTR2
YGATAH4	BTY
QS2	BTP

**References**

- Hares, D. R. (2015) Selection and implementation of expanded CODIS core loci in the United States. *Forensic Sci. Int. Genet.* **17**, 33–34.

## Ordering Information

Product	Contents	Cat. no.
Investigator 24plex QS Kit (100)*	Primer Mix, Fast Reaction Mix 2.0, Control DNA, Allelic Ladder 24plex, DNA Size Standard 24plex (BTO) and Nuclease-Free Water	382415
Investigator 24plex GO! Kit (200)*	Primer Mix, Fast Reaction Mix 2.0, Control DNA, Allelic Ladder 24plex, DNA Size Standard 24plex (BTO)	382426
Investigator 26plex QS (100)*	Primer Mix, Fast Reaction Mix 3.0, Control DNA, Allelic Ladder 26plex and Nuclease-Free Water	382615
Investigator ESSplex SE QS Kit (100)*	Primer Mix, Fast Reaction Mix 2.0, Control DNA, Allelic Ladder ESSplex SE QS, DNA Size Standard 550 (BTO) and Nuclease-Free Water	381575
Investigator IDplex Plus Kit (100)*	Primer Mix, Fast Reaction Mix, Control DNA, Allelic Ladder IDplex Plus, DNA Size Standard 550 (BTO) and Nuclease-Free Water	381625
Investigator Triplex AFS QS Kit (400)	Primer Mix, Reaction Mix, DNA Polymerase, Control DNA, Allelic Ladder Triplex AFS, DNA Size Standard 550 (ROX) and Nuclease-Free Water	380317
Investigator HDplex Kit (100)	Primer Mix, Reaction Mix, DNA Polymerase, Control DNA, Allelic Ladder HDplex, DNA Size Standard 550 (BTO) and Nuclease-Free Water	381215
Investigator Argus X-12 QS Kit (25)*	Primer Mix, Fast Reaction Mix 2.0, Control DNA, Allelic Ladder Argus X-12 QS, DNA Size Standard 550 (BTO) and Nuclease-Free Water	383223
Investigator Argus Y-28 QS Kit (100)*	Primer Mix, Fast Reaction Mix 3.0, Control DNA, Allelic Ladder Argus Y-28 QS, DNA Size Standard 24plex (BTO) and Nuclease-Free Water	383625
ForenSeq MainstAY Kit (96)*	Reagents for targeted sequencing of established autosomal and Y-STR markers	V16000142
ForenSeq MainstAY SE Kit (96)	Reagents for targeted sequencing of established autosomal and Y-STR markers; includes the highly polymorphic SE33 marker	V16000183

\* Larger kit sizes available; please inquire.

Investigator STR Kits meet ISO 18385 requirements.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.