

Cell Line Authentication Program Information

LGC Standards is pleased to offer short tandem repeat analysis, or STR profiling as part of our cell line authentication program designed to support your research. LGC Standards genotyping laboratories are equipped with state of the art equipment. We are able to offer genotyping using a number of different technologies. Here we compare each STR service to the reference loci routinely used by ATCC®.

ATCC® Reference Loci	PowerPlex® 16HS 16 Loci Service	AB Identifiler®
Amelogenin	Amelogenin	Amelogenin
CSF1PO	CSF1PO	CSF1PO
D13S317	D13S317	D13S317
D16S539	D16S539	D16S539
	D18S51	D18S51
	D21S11	D19S5433*
	D3S1358	D21S11
D5S818	D5S818	D2S1338*
D7S820	D7S820	D3S1358
D8S1179	D8S1179	D5S818
	FGA	D7S820
	Penta D*	D8S1179
	Penta E*	FGA
TH01	TH01	TH01
TPOX	TPOX	TPOX
vWA	vWA	vWA

*Loci unique to that service

After considering the expected industry requirements for cell line authentication, LGC Standards recommends the 16 Loci service for routine cell line authentication.

Please be aware that current STR profiling systems are **only suitable** for cell lines of human origin.

The short tandem repeat (STR) profile generated by LGC Standards is indicative only of the sample sent to LGC Standards at the time it was sent. Any manipulation of a cell line may induce changes. LGC Standards recommends regular testing of all immortalised human cell lines. Comparative notes reported are made relative to an available reference STR profile. It is the responsibility of the end user to decide on the fitness of their particular cell line for their purpose.

Cell Authentication; STR profiling and analysis protocol

Transporting sample(s)

Samples can be transported using Transport buffer, a proprietary technology from LGC, which acts as a lysing agent to the cell whilst stabilising the gDNA.

Samples sent using our Transport buffer can be shipped at ambient temperature to our Cologne facility.

Dry ice: If you prefer to ship using dry ice contact your local office for an alternate delivery address.

Extraction

1. DNA will be extracted from cells using a sbeadex[®] nucleic acid extraction kit.
If you plan to extract gDNA, information can be found on the next page
2. Amplification using either 16 Loci or Identifier protocols
3. Samples are separated on a 3100 or 3130xl (31XX) AB platform
4. Data is analysed using Genemapper ID

Reporting

The results of STR analysis will be reported both as a hard copy and electronically, as a .PDF file accompanied by raw data files provided for your reference

Turnaround

Reports will be issued within 4-5 weeks of receipt of samples, unless otherwise agreed, note that faster turnaround times will incur an express service fee, please contact your local LGC Standards office for more information.

Post PCR samples will be held for 3 months post analyses by LGC Standards, after which they will be destroyed.

Pricing Schedule

Contact your local LGC Standards office for further information www.lgcstandards.com/contact

www.lgcstandards.com/authenticate

Supplying cell pellets for profiling

Please send your cultured cells in a 1.5ml or 2ml screw top vial on dry ice.

Supplying cell pellets for profiling using transport buffer

Please send your cultured cells in a 1.5ml or 2ml screw top vial suspended in Transport buffer. This is a simple process which involves adding 400µl of transport buffer to your cell pellet. Please refer to the **protocol on Transport buffer information sheet** for specific information to prepare your samples.

Supplying gDNA for profiling

LGC Standards have optimised the extraction of gDNA suitable for profiling using sbeadex[®] blood kits following a protocol specific for cell lines. If you wish to extract the gDNA from your cell sample please be aware that we require your DNA to meet the following quality and quantity standards

gDNA Quality

Recommended parameters for assessment are:

ratio of optical density at 260nm to 280 nm (A260/280) between 1.8 and 1.9 and optical density at 260nm to 230nm (A260/230) > than 1.5.

gDNA Quantity - Minimum of 10ng/ul in a total of 10µl

Supplied DNA solution must be free of any PCR inhibitors (complexing agents like EDTA, proteins, polysaccharides, and DMSO).

Reference profile for analysis of your sample

LGC Standards reads all cell line STR profiles blind. However an important part of the authentication process is to understand what you believe the cell line to be. Also as there are many cell lines with closely related sub-clones, any drift in a genotype can make it difficult to determine which profile is the most accurate for your sample and hence make the process of determining the fitness for purpose of that cell line more complex.

In order to provide the most accurate report it is important that you provide a reference to a known STR (where available). Through our relationship with ATCC we can access the ATCC STR profile database. You simply need to provide the ATCC catalogue number which can be easily obtained from the website www.lgcstandards-atcc.org. If your cell line is from another source, please indicate and we will investigate how we can work together to obtain the reference you require.

When we review your order we will request the most appropriate reference for your sample. If you are unable to provide either an ATCC reference or other reference STR profile, LGC Standards can still profile your sample. Although without a reference we cannot comment on the profile generated, however we will search our databases to eliminate contamination or misidentification by common laboratory cell lines.

Contact your local LGC Standards office for further information www.lgcstandards.com/contact