

# Order Guide

## Human cell line identification (Short Tandem Repeat)

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# What is human identification service?

## Human ID

Human ID provides a personal genetic identification service for research and development purposes.

The service provides a parentage test that can determine a biological relationship by comparing and analyzing an individual's unique DNA pattern, paternity test that can prove a biological relationship on the father's side up to the first cousin four times removed, and a maternity test that proves a biological relationship on the mother's side. It also provides a DNA test for the deceased and personal identification tests. Human ID conducts genetic analysis on various specimens such as hair, oral epithelial cells, ashes, and saliva, and provides reliable test results with 99.99% accuracy.

## Test Purposes

- Proof of lineal descendants/paternity/maternity
- Personal identification
- Mutagenesis service available
- Proof of biological relationship using the DNA of the remains of the deceased
- Genetic identification for the suspect and the evidence of the crime scene

# Sample type / QC criteria / TAT

## <Required DNA>

Concentration	Total amount
>10ng/ul	>200ng

## <TAT>

3-4 working days

## <Other type of sample - requirement>

- Cell pellet: >10,000 cells (DNA extraction fee will incur / send with dry-ice)
- Tissue: >20mg (DNA extraction fee will incur / send with dry-ice)
- Blood: >2ml (DNA extraction fee will incur / send with dry-ice)
- FFPE: Not serviceable

# Result Report

## Cell line authentication Result Report

Do date.	2020. 01. 01	Method	A-STR Genotyping analysis, 3730XL DNA analyzer
Reagent	PowerPlex®21 System KIT	Percent Match	95 %

Cell name	font color test		
Amelogenin	test		
STR Locus			
D3S1358			
D1S1656			
D6S1043			
D13S317			
Penta E			
D16S539			
D18S51			
D2S1338			
CSF1PO			
Penta D			
TH01			
vWA			
D21S11			
D7S820			
D5S818			
TPOX			
D8S1179			
D12S391			
D19S433			
FGA			

### Interpretation of Results

\* Reference : ICLAC - Match Criteria for Human Cell Line Authentication

- Is the percent match result in the range 0 - 55% ?
  - This result is consistent with the two samples being unrelated (different donors)
- Is the percent match result in the range 56 - 79% ?
  - This result is indeterminant and may need further testing
- Is the percent match result in the range 80 - 100% ?
  - This result is consistent with the two samples being related (same donor)

## ✓ ICLAC (International Cell Line Authentication Committee)

### 3c) Use the questions in Table 3C on the following page to help interpret your result

Comparison of many cell line samples over time has shown that there is a clear gap between related (same donor) and unrelated (different donor) samples for the vast majority of cell lines (1, 2). Related samples generally yield a result in the 80-100 % match range, and unrelated samples in the 0-55 % match range. A small number of samples may give results in the 56-79 % match range. These usually arise from a set of known variable cell lines and may need additional testing to interpret correctly – for example, using an increased number of loci or a different test method.

**Table 3B: Percent Match Calculations**

TOTAL ALLELES in the Test Sample	8
TOTAL ALLELES in the Reference Sample	16
SHARED ALLELES, Test and Reference Samples	13
Percent Match for Test and Reference Samples	81.3 %

Percent Match can be calculated using an appropriate Match Algorithm (2,3). For this Worksheet:


$$\text{Match Algorithm} = \frac{\text{SHARED ALLELES} \times 2}{\text{TOTAL ALLELES in the Test Sample} + \text{TOTAL ALLELES in the Reference Sample}}$$

$$\text{Percent Match} = \text{Match Algorithm result} \times 100$$

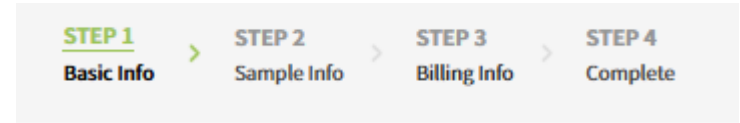
# Order Guide

① Place an order through our website:  
<http://dna.macrogen.com/eng/>

② Navigate to 'Order' → 'Fragment Analysis'

	Quotation	Order	Result	My Account	Support
	CES	CES	CES	My Account	User Guide
Gene Service	Sequencing Service	Sequencing Service	Oligo	My Payment	CES
Oligo	Customized Sequencing	Customized Sequencing	NGS	My Order	Gene Service
NGS	Identification	Identification	Microarray	My Information	Oligo
Microarray	Cloning	Cloning			NGS
Proteomics	EZ-Seq/Eco-Seq	EZ-Seq/Eco-Seq			Microarray
My Quotation	Oligo	Oligo			FAQ
	DNA Oligo Synthesis	DNA Oligo Synthesis			Locations
	RNA/Peptide Synthesis	RNA/Peptide Synthesis			Notice & Event
	Primer Design	Primer Design			Download
					Contact us
					Client's Publication
					Verification of certificate authenticity
					How to pay

# Order Guide



## Service Selection

Fragment Analysis

human ID  
(Cell Line Authentication)

① Select 'Human ID'

Report Type ✓ Refer to the 'Report Type'. You can download a sample report.

\* Download Sample Report

STR Profiles for each individual sample	STR profiles are provided for each individual sample without comparison results.		
Client's Sample vs. Reference Data Base	Matching score is provided based on comparative analysis of STR profiles between the submitted sample(s) and reference cell lines.	ATCC	ATCC reference is used to compare the client's sample.
		Cellosaurus	Cellosaurus reference is used to compare the client's sample.
		ATCC + Cellosaurus	Both ATCC and Cellosaurus reference are used to compare the client's sample.
Client's Sample vs. Client's Sample	Matching score is provided based on comparative analysis of STR profiles between submitted samples.		
Client's Sample vs. Client's Previous Sample	Matching score is provided based on comparative analysis of STR profiles between the newly submitted sample(s) and previously submitted sample(s) to Macrogen.		

# STEP 1 : for DNA samples

<b>STEP 1</b> Basic Info	>	STEP 2 Sample Info	>	STEP 3 Billing Info	>	STEP 4 Complete
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▶ For DNA samples:

## STEP 1 Enter Basic Information. (\* Required field)

Sample *	<input type="text" value="DNA"/>	① Select "DNA" from the dropdown list
Sample Type *	<input type="text" value="Cell line"/>	
Test Type *	<input type="text" value="A-STR"/>	
Report Type *	<input type="text" value="Client's Sample vs. Reference Data Base"/>	② Select one of the report types from the dropdown list
Order Sheet	<input type="button" value="Template Download"/>	Please download and fill out the order sheet template, then upload it <b>on the next page.</b>

If you need further assistance, please contact us at [array@macrogen.com](mailto:array@macrogen.com)

③ Download the relevant order template and fill it out

Report Type *
---------------

<input type="text" value="STR Profiles for each individual sample"/>
--

✓ Note that the order template is not required for the report – "STR profiles for each individual sample"

# STEP 1 : for 'other' samples

► For samples that requires DNA extraction:

**STEP 1** Basic Info > STEP 2 Sample Info > STEP 3 Billing Info > STEP 4 Complete

Sample *	Others (gDNA extraction required) ▾ <small>📘 The price of gDNA extraction differs depending on the sample s</small>
Sample Type *	Choose ▾
Test Type *	Choose ▾
Report Type*	Choose ▾

If you need further assistance, please contact us at [array@macrogen.com](mailto:array@macrogen.com)

Report Type\*

STR Profiles for each individual sample

- ① Select “Others” from the dropdown list
- ② Select the type of sample (cell, tissue, blood)
- ③ Select one of the report types from the dropdown list
- ④ Download the relevant order template and fill it out

✓ Note that the order template is not required for the report – “STR profiles for each individual sample”

# STEP 2 : Report type - STR Profiles of individual samples

STEP 1 Basic Info > **STEP 2 Sample Info** > STEP 3 Billing Info > STEP 4 Complete

▶ Report type: STR Profiles of individual samples

**STEP 2** Enter Sample Information. (\* Required field)

√ Add additional rows for multiple samples

Add + | Delete -

[1 / 1] Filtered Row : 1

#	Sample Name*	KIT*
1		PowerPlex fusion 6c

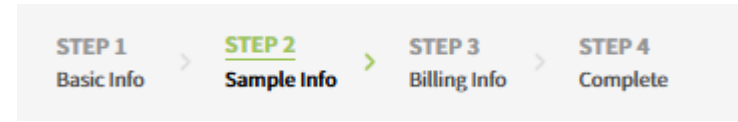
① Fill out sample names

② Select “PowerPlex fusion 6c” kit

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# STEP 2 : Report type – Comparison report



Client's Sample vs. Reference Data Base	Matching score is provided based on comparative analysis of STR profiles between the submitted sample(s) and reference cell lines.	ATCC	ATCC reference is used to compare the client's sample.
		Cellosaurus	Cellosaurus reference is used to compare the client's sample.
		ATCC + Cellosaurus	Both ATCC and Cellosaurus reference are used to compare the client's sample.
Client's Sample vs. Client's Sample	Matching score is provided based on comparative analysis of STR profiles between submitted samples.		
Client's Sample vs. Client's Previous Sample	Matching score is provided based on comparative analysis of STR profiles between the newly submitted sample(s) and previously submitted sample(s) to Macrogen.		

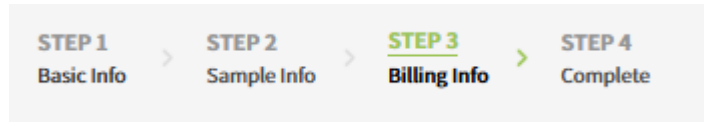
**STEP 2 Upload Order Sheet (\* Required)**

Upload

① Upload the filled-out order template

Previous

# STEP 3



## ① Select sample storage period and fill in other information

Storage Period *	<input checked="" type="radio"/> Immediate Disposal <input type="radio"/> 1 Month <input type="radio"/> 3 Month <small><span style="color: green;">!</span> If immediate disposal is selected, additional orders and re-sequencing cannot be ordered as the sample is immediately discarded after the primary experiment.</small>
Ordered by *	<input type="text" value="testertester"/>
Actual Orderer Contact	<input type="text" value="123456789"/>
Email	<input type="text" value="smcho@macrogen.com"/>
Additional E-mail for Result *	<input type="text" value="smcho@macrogen.com,tester2@macrogen.com"/>
Comment	<input type="text"/>
Institution for Billing	<input type="text" value="Macrogen Spain"/> <input type="button" value="Find"/>
PO Number	<input type="text"/>
ATTN	<input type="text" value="Tester2 tester"/>
Country *	<input type="text" value="Spain"/> <input type="button" value="Same as Account"/>
Billing Address *	<input type="text" value="4"/> <input type="text" value="5777777"/> <input type="text" value="2"/>

Phone *	<input type="text" value="111111"/>
Coupon	<input type="text"/> <input type="button" value="Apply"/>
Promotion Code	<input type="text" value="Please Enter."/> <input type="button" value="Apply"/>
Request on payment	<input type="text"/>
Accept the Order Terms and Conditions. *	<input type="checkbox"/> I agree to the terms and conditions of the order. <a href="#">View order terms and conditions &gt;</a>
<input type="button" value="Previous"/> <input type="button" value="Save"/> <input type="button" value="Submit"/>	

# Order is placed successfully

STEP 1 Basic Info > STEP 2 Sample Info > STEP 3 Billing Info > **STEP 4 Complete**

① Print out your order barcode label and enclose it in the FedEx shipment

② If you are sending NGS or Microarray samples together with Human ID samples, please stop the order process at this point and contact us at [array@macrogen.com](mailto:array@macrogen.com). We will send you a new link to generate an air way bill.

③ If you are sending only Human ID samples, please click the 'FedEx' button on this page to generate an air waybill.

④ Contact your local FedEx office and arrange sample pick-up schedule.



Your order has been placed **successfully**.

Order Number | **HC01284037**

Please double check your order information then send your samples accordingly.

Please include your order number when contacting us by email for further assistance.  
[array@macrogen.com](mailto:array@macrogen.com)

Generate an **Airway Bill** and print your order barcode.

※ NGS and Microarray samples must **NOT** be shipped with CES samples for proper order registration. Please contact your sales representative for shipping instruction.

DHL

Fedex

Print Order Barcode

# FedEx Air way bill guide

\* Denotes required field

address1  address2  address3

Sender information	
*Contact name	testertester
Company	test macrogen12
*Address 1	4
*Address 2	5777777
*Country	Spain
*City	Santiago
*State/province	Select
*Postal code	7820436
*Phone no.	123456789
Sender tax ID no. Ex:	

Shipping Coverage Policy	
Free shipping will be provided for packages containing 20 or more sequencing reactions with NO dry ice or ice pack.	
If your shipment does not meet the free shipping requirements, delivery fee will be included in your order's invoice.	

Package and Shipment Details	
*Service type	FedEx International Priority
*Package type	Select
*No. of packages	1
*Weight	0.5
*Weight unit of measure	kg

Please call your local FedEx for sample pick-up. [www.fedex.com](http://www.fedex.com)

Billing Details	
*Bill transportation to	Recipient
This webpage is designated for Macrogen account fusersor sample deliveries; billing detail is preset as Macrogen(recipients).	

Personal information is shared with FedEx only when you requested a shipping label.

Continue

✓ The declared price for the item should be somewhere between USD10 – 100 in order to avoid any scrutiny.

✓ The amount of dry-ice to be used should be less than 5kg.

Commercial invoice could only be viewed as a pop-up screen.  
To view the commercial invoice, please disable the pop-up block option.

# Thank You

발표를 들어주셔서 감사합니다.