Product	**FastGene® 2x IC Green Universal**
Catalog #	LS40#, LS41#
Category	qPCR Reaction Mix

Quick Notes

- Low-inhibition IC Green qPCR dye: designed to minimize PCR inhibition.
- Separate ROX vial included: passive reference dye for signal normalization (compatible instruments).

Product Description

NIPPON Genetics EUROPE has developed extensive expertise in DNA-binding dyes and used this know-how to create an intercalating (IC) DNA dye for real-time PCR. The dye enables sensitive quantification of amplified DNA while minimizing inhibition of the polymerase reaction, which can occur with some other intercalating dyes.

FastGene® 2x IC Green Universal is supplied in an optimized buffer mix designed to support efficient amplification of both GC-rich and AT-rich targets under standard or fast cycling conditions. In addition, a small-molecule inhibitor helps suppress primer-dimer formation, reducing nonspecific signal and improving overall amplification efficiency.

Product Applications

FastGene® 2x IC Green Universal Mixes are ideally suited for:

- Gene expression analysis (absolute and relative quantification)
- Detection of low-copy targets
- Viral load quantification
- Quantification of NGS libraries
- Melt curve analysis for assay specificity confirmation
- Genotyping / SNP discrimination using melting profile differences (melt-based assays)

Product Specifications

Shipping and Storage

- Protect from light to prevent dye bleaching.
- Store at -20 °C for long-term use (stable 12 months).
- ≥30 freeze–thaw cycles supported.
- To reduce freeze–thaw, store at 4 °C for frequent use (stable 1 month).

Primer Design

- Confirm primer specificity using Primer-BLAST
- Recommended amplicon length: 80–200 bp (max. 400 bp).
- Shorter amplicons allow shorter annealing/extension times.
- Recommended primer Tm: ~60 °C (Primer3 default settings).≥30 freeze–thaw cycles supported.

Kit Codes and Components		
LS40S	FastGene® 2x IC Green Universal	10 rxns
LS4001	FastGene® 2x IC Green Universal	100 rxns
LS4005	FastGene® 2x IC Green Universal	500 rxns
LS4050	FastGene® 2x IC Green Universal	5000 rxns
LS41S	FastGene® 2x IC Green w/ Fluorescein	10 rxns
LS4101	FastGene® 2x IC Green w/ Fluorescein	100 rxns
LS4105	FastGene® 2x IC Green w/ Fluorescein	500 rxns
LS4150	FastGene® 2x IC Green w/ Fluorescein	5000 rxns
Related Products		
LS45S	FastGene® PROBE 2 x qPCR Universal	10 rxns
LS4501	FastGene® PROBE 2 x qPCR Universal	100 rxns
LS4505	FastGene® PROBE 2 x qPCR Universal	500 rxns
LS4550	FastGene® PROBE 2 x qPCR Universal	5000 rxns

Contact & Support

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qPCR Protocol (20 µl reactions)

Step 1 — Master mix preparation

1. Thaw all reagents completely, mix well, and briefly spin down.
2. Prepare a master mix for all reactions (+ extra volume for pipetting loss).

Component	Volume	Final conc.
PCR-grade water	up to 20 µl	—
2× FastGene® IC Green	10.0 µl	1×
Forward primer (10 µM)	0.8 µl	400 nM
Reverse primer (10 µM)	0.8 µl	400 nM
Template	as required	e.g., 1 µg gDNA or 100 ng cDNA

Step 2 — Master mix preparation

1. Dispense the calculated volume of master mix into each well/tube.
2. Add template to each reaction.
3. Seal, mix gently, and briefly centrifuge to remove bubbles/ collect liquid.

Step	Temperature	Time	Cycles
Initial denaturation	95 °C	2 min*	1
Denaturation	95 °C	5 sec	40
Annealing & elongation	60–65 °C	20–30 sec	
Melt curve	optional		

*For GC-rich targets (>65% GC), 5 min at 95 °C may be used.

ROX preparation (if required)

ROX is a passive reference dye used for signal normalization on ROX-dependent instruments.
The kit includes 50 µM ROX. Prepare working mixes like this:

Reagent	High ROX	Low ROX
2× Mix	1 ml	1 ml
50 µM ROX additive	20 µl	2 µl
Final ROX / reaction	500 nM	50 nM

ROX requirements are instrument-specific—use this overview to choose No ROX, Low ROX, or High ROX setup.

ROX category	Manufacturer	qPCR instrument model(s)
No ROX required	NIPPON Genetics EUROPE	FastGene® qFYR; FastGene® qFYR Plus
No ROX required	Bio-Rad	CFX Opus; CFX96; CFX 384; Chromo4; Opticon; Opticon™ 2
No ROX required	Azure Biosystems	Cielo 6
No ROX required	Analytik Jena	qTOWER iris
No ROX required	Roche	LightCycler® 96
No ROX required	QIAGEN	QIAquant
Low ROX	Thermo Fisher Scientific	QuantStudio 5
Low ROX	Agilent	MX3000P; MX3005P; MX4000P
Low ROX	Cepheid	SmartCycler
Low ROX	Eppendorf	Mastercycler ep realplex; Mastercycler ep realplex 2S
Low ROX	Fluidigm	BioMark
Low ROX	Hain Lifesciences	FluoroCycler®96
Low ROX	PCRmax	Eco™ 48
Low ROX	QIAGEN	RotorGene™ 3000; RotorGene™ 6000; RotorGene™ Q
Low ROX	Roche	LightCycler® 480; LightCycler® Nano
Low ROX	Takara	Thermal Cycler Dice® (TP800)
Low ROX	Techne	PrimeQ; Quantica
Low ROX	Thermo Fisher Scientific	7500; 7500 FAST; Piko Real®; QuantStudio™ 12K Flex; ViiA7™
High ROX	Thermo Fisher Scientific	7000; 7300; 7700; 7900; 7900HT; 7900HT FAST; StepOne™; StepOne™plus
Fluorescein	Bio-Rad	iCycler iQ; MyiQ; iQ®5