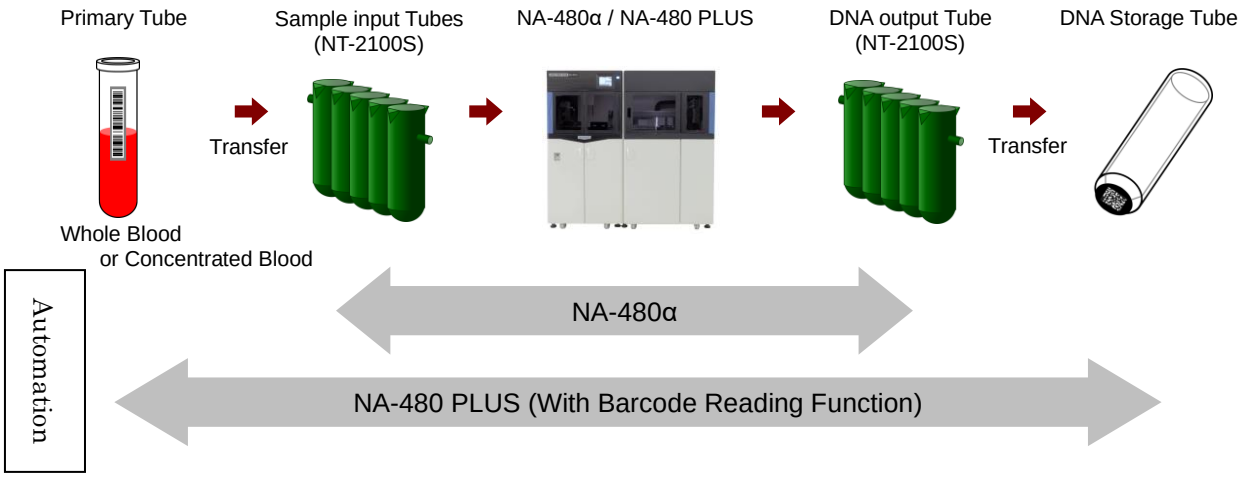
NA-480α BLOOD DNA Protocol

DNA Extraction from Whole Blood and Concentrated Blood

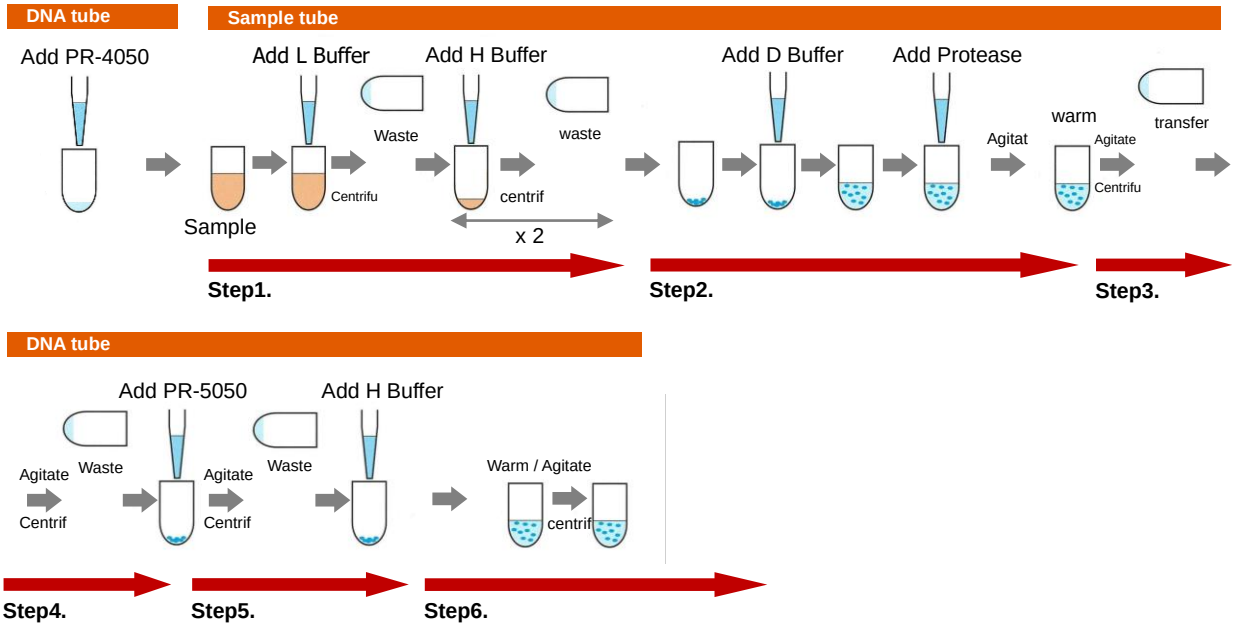
KURABO NA-480α / NA-480 PLUS can process DNA extraction from 30 samples all at once.
This data shows the examples of DNA Extraction from Whole Blood and Concentrated Blood.



Experimental conditions

Sample / Volume	Whole Blood / 5 ml
	Concentrated Blood (removed Plasma) / 2 ml
Pretreatment for Concentrated Blood	(1) Centrifuge Flesh Blood (3,000 rpm, 15min, room temperature)
	(2) Remove the plasma (upper layer)
	(3) Mix remained Buffy-coat and red blood cells. →Concentrated Blood
Platform	NA-480α or NA-480 PLUS
Protocol	BLOOD FRESH V (NA-480α) or FRESH+ 1-5V (NA-480 PLUS)
Reagents Kit	NR-120
Consumables	Sample input tube: NT-2100S、DNA output tube: NT-2100S
Principle	Alcohol precipitation method
Process	Step1. Collection leukocyte
	Step2. Dissolution leukocyte and Denature protein
	Step3. Remove inpurities
	Step4. DNA precipitation
	Step5. DNA Washing
	Step6. DNA Elution (Elution volume: 1100 µl)

Work Flow



Extraction Time 10 samples: 2.0 hours (NA-480α) / 2.5 hours (NA-480 PLUS)
20 samples: 2.2 hours (NA-480α) / 2.8 hours (NA-480 PLUS)
30 samples: 2.7 hours (NA-480α) / 3.2 hours (NA-480 PLUS)

Analysis

Yield and Purity Measured absorbance of 260nm with Nanodrop

・DNA yield is calculated as follows:

「A260 x 50 x dilution factor x elution volume」

・DNA purity is evaluated by the ratio of A260 / A280

Pulse Field Gel Electrophoresis Measured the length of Eluted DNA 30µl with pulse field gel electrophoresis.

System: Gene Navigator system (Amersham Biosciences)

Conditions: 0.5x TBE, 1.2% agarose, 200V, 150 mA (Total 21h)

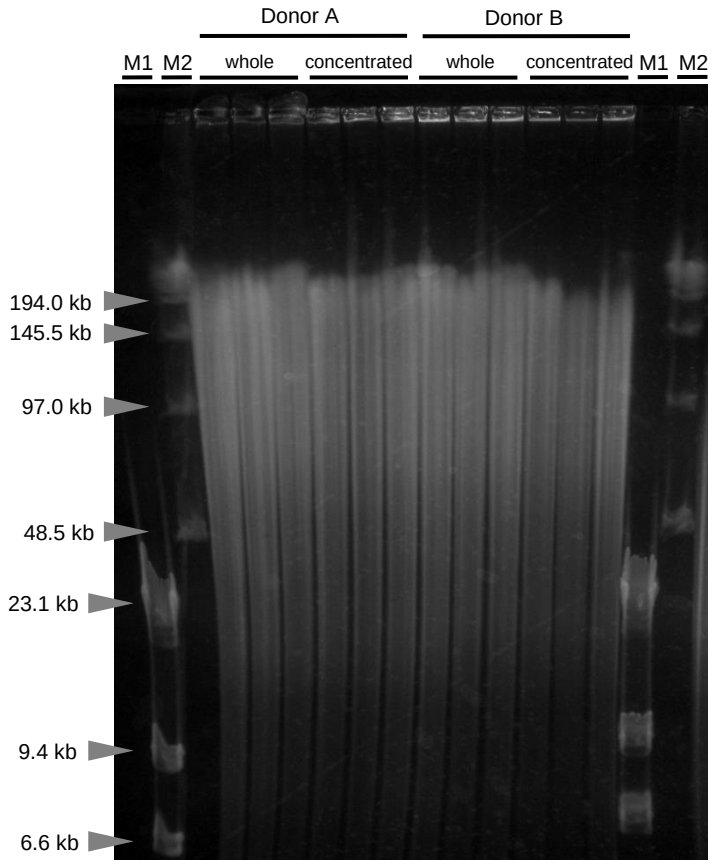
Phase	Pulse (sec)	Duration (h)
1	0.5	0.5
2	8.0	0.5
3	1.0	3.0
4	2.0	3.0
5	4.0	6.0
6	8.0	8.0

Results

Yield and Purity

Donor	sample	yield (μg)	purity A260/280	purity A260/230
A	Whole blood 5 ml	138.3	1.89	2.26
(leukocyte 6,700/μl)	Concentrated 2 ml	82.5	1.85	1.96
B	Whole blood 5 ml	77.6	1.83	2.19
(leukocyte 3,800/μl)	Concentrated 2 ml	56.0	1.84	2.06

Pulse Field Gel Electrophoresis



M1: λ/*Hin*d III marker

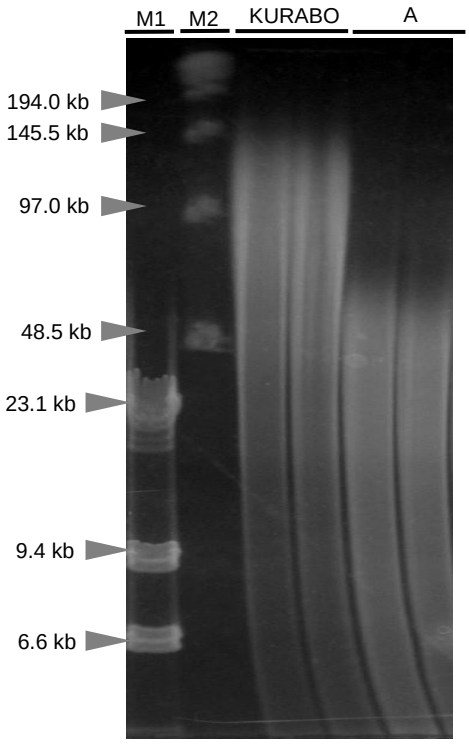
M2: Lambda PFG Ladder

Confirmed that about 200 kb DNA was extracted.

Pulse Field Gel Electrophoresis

(Compared with competitor)

Anarized Whole blood(Same donor) DNA extracted with NA-480α (KURABO) and manual kit (competitor A).



M1: λ/*Hin*d III marker

M2: Lambda PFG Ladder

Confirmed that DNA extracted with NA-480α (KURABO) is 50kb longer than competitor A's

Information

Platform NA-480α / NA-480 PLUS

Protocol BLOOD FRESH V (NA-480α) / FRESH+ 1-5V (NA-480 PLUS)

Reagent Kit NR-120

Reagents	Number	contents
BR-1083 (L Buffer)	1	2
EDB-02	2	5 vials
BR-3080 (H Buffer)	3	4
BR-8075 (D Buffer)	8	1

PR-4050-5, PR-5050-5

Reagents	Number (Code)	Contents
Precipitation Buffer	4 (PR-4050)	5
Wash buffer	5 (PR-5050)	5

Tube Unit Sample input tube: NT-2100S

DNA output tube: NT-2100S

■ Download Brochure

https://www.kurabo.co.jp/bio/biodocument/NA480plus_En.pdf

■ Contact Information

https://www.kurabo.co.jp/bio/English/contact/contact.php