Introduction

These protocols are compiled from the literature from Biacore AB.
These protocols apply to the Biacore 2000/3000 instruments and software

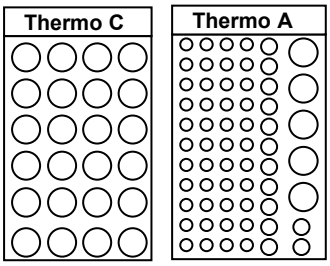
The following protocols are present:

Startup	Starting a Biacore machine
Continue	Leaving an instrument for 3-4 days
Desorb	Cleaning the instrument once a week
Sanitize	Cleaning the instrument once a month
Close	Leaving the instrument up to 5 days
Shutdown	Leaving the instrument for more than 5 days
System check	Checking of the system performance
Emergency stop	Stopping a program at once
Power failure	Recover from power failure

STARTUP

Start a Biacore 1000, 2000, 3000 instrument. The procedure takes about 1 hour to complete.

Position of vials



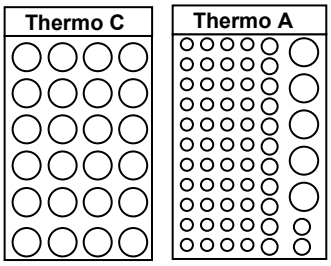
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Switch on BIAcore instrument	-	-	-	-	-
Wait until the GREEN ready LED light	-	-	-	2	-
Switch on the computer and start BIAcore Control Software	-	-	-	5	-
Make sure there is a Sensor chip inside	-	-	-	-	-
Place buffer in the Bottle compartment and insert tubing	Bottle compartment	Flow buffer	-	-	-
Prime the system	-	Flow buffer	-	7	-
Run Continue/Standby	-	Flow buffer	-	-	max 72 - 96 hours
Wait until the temperature LED is steady	-	-	-	45-60	-

Solution	Preparation
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

CONTINUE

Leaving the instrument up to 72 – 96 hours.
For Control Software 2.x up to 72 hours.
For Control Software 3.x up to 96 hours.

Position of vials



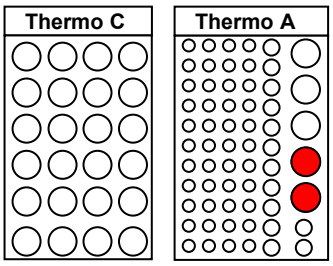
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Continue/Standby	Bottle compartment	Flow buffer	90	-	After 72 -96 hours the method will stop.

Solution	Preparation
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005 % P20

DESORB

Clean tubing, IFC-channels and Injection port. Should be done once a week. Use a special desorb chip since the chemicals used can destroy the ligand surface.

Position of vials



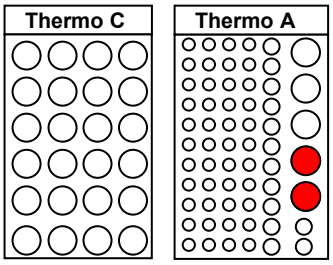
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Insert desorb chip	-	-	-	-	skip prime
Unclogging	-	Flow buffer	-	4	-
Desorb	R2 F3 R2 F4	Desorb solution 1 Desorb solution 2	3 3	22	-
Prime	-	Flow buffer	-	7	-

Solution	Preparation
Desorb solution 1	0.5% (w/v) SDS in water / BIA maintenance kit
Desorb solution 2	50 mM Glycine-NaOH pH 9.5 / BIA maintenance kit
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

SANITIZE

Clean tubing, IFC-channels and Injection port from bacteria. Should be done once a month. Use a special desorb chip since the chemicals used can destroy the ligand surface.

Position of vials



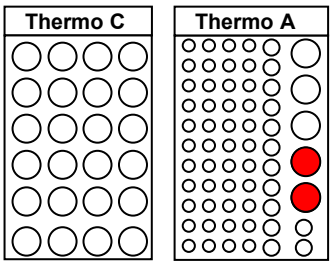
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Insert Desorb chip	-	-	-	-	skip prime
Flush	-	Flow buffer	-	3	-
Injection port	-	-	-	-	wash injection port by hand with tap water
Needle rep/positioning	-	-	-	-	check needle positions
Unclogging	-	Flow buffer	-	4	-
Desorb	R2 F3 R2 F4	Desorb solution 1 Desorb solution 2	3 3	22	-
Sanitize	Bottle compartment	Hypochlorite sol. Flow buffer	10	35 10	follow messages on the screen
Prime	-	Flow buffer	-	7	-

Solution	Preparation
Desorb solution 1	0.5% (w/v) SDS in water / BIA maintenance kit
Desorb solution 2	50 mM Glycine-NaOH pH 9.5 / BIA maintenance kit
Hypochlorid solution	0.75 ml stock to 10 ml water / BIA maintenance kit
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

CLOSE

Leaving the instrument for up to 5 days. Use a special desorb chip since the chemicals used can destroy the ligand surface.

Position of vials



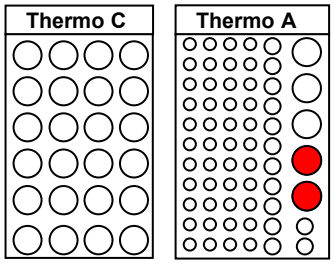
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Insert Desorb chip	-	-	-	-	skip prime
Unclogging	-	Flow buffer	-	4	-
Desorb	R2 F3 R2 F4	Desorb 1 Desorb 2	3 3	22	-
Close	R2F3	water	2.5	11	See messages on screen

Solution	Preparation
Desorb solution 1	0.5% (w/v) SDS in water / BIA maintenance kit
Desorb solution 2	50 mM Glycine-NaOH pH 9.5 / BIA maintenance kit
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

SHUTDOWN

Leaving the instrument for more than 5 days. Cleaning tubing, IFC and Injection port, then shutdown the system. Use a special desorb chip since the chemicals used can destroy the ligand surface.
Total time ± 2 hours.

Position of vials



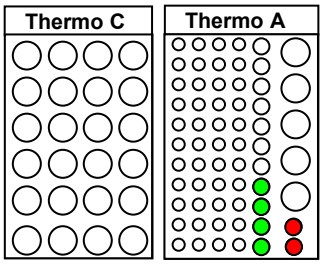
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Insert Desorb chip	-	-	-	-	skip prime
Change buffer	Bottle compartment	Water	-	3	skip prime
Unclogging	-	-	-	4	-
Desorb	R2 F3 R2 F4	Desorb solution 1 Desorb solution 2	3 3	22	-
Sanitize	Bottle compartment	Hypochlorite sol. Water	10	35 10	follow messages on the screen
Shutdown	Bottle compartment	Water 70 % Ethanol	-	10	**follow messages on the screen**
Injection port	-	-	-	-	wash injection port by hand with tap water
Needle rep/positioning	-	-	-	-	check needle positions clean vial dislodger
Close the BIACORE Control Software	-	-	-	-	Skip shutdown
Shut off the computer	-	-	-	-	-
Shut off BIACORE	-	-	-	-	-

Solution	Preparation
Desorb solution 1	0.5% (w/v) SDS in water / BIA maintenance kit
Desorb solution 2	50 mM Glycine-NaOH pH 9.5 / BIA maintenance kit
Hypochlorite solution	0.75 ml stock to 10 ml water / BIA maintenance kit
70% ethanol	

SYSTEM CHECK

A comprehensive check of system performance. Insert new CM5 sensor chip first. The procedure must be run at 25°C. Generates a report for evaluation and printing.

Position of vials



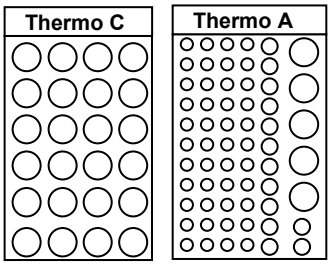
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Insert new sensor chip	-	-	-	7	Prime
Normalize	R2F2	Glycerol	0.5	- 5	Run at 25°C
System Check	R2F1	Sucrose	1	40	-
	R2E1	Empty vial	-	-	-
	R2E2	Empty vial	-	-	-
	R2E3	Empty vial	-	-	-
	R2E4	Empty vial	-	-	-
	Bottle Compartment	Flow buffer	-	-	-
System Evaluation	-	-	-	-	-

Solution	Preparation
Glycerol	40% (w/w) Glycerol / BIA maintenance kit
Sucrose	15% (w/w) Sucrose / BIA maintenance kit
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

EMERGENCY STOP

Stop a running method at once. Beware that stopping a cycle may result in loss of sample.

Position of vials



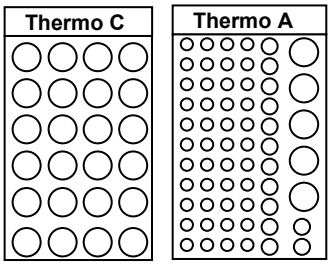
Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
Press: Ctrl-BREAK or Run – Stop Method	-	-	-	-	Method will stop when current cycle ends. Read messages.
Press: Ctrl-BREAK again	-	-	-	-	Method will stop immediately. Read messages.
Prime	-	Flow buffer	-	7	To extra clean the system.

Solution	Preparation
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

POWER FAILURE

Starting up after a power failure. First try to find the cause !

Position of vials



Step / Command	Position	Solution	Volume (ml)	Time (min)	Remarks
First disconnect all plugs or shut down all instruments	-	-	-	-	
Check if the fuse of the power block is on	-	-	-	-	
Then insert BIACORE plug and switch on	-	-	-	-	
Insert the plug of the computer and switch on	-	-	-	-	
Start BIACORE Control Software	-	-	-	-	Save any recovered files first.
When both instruments are working properly, insert the other plugs	-	-	-	7	
Prime	-	Flow buffer	-	-	
Wait until the temperature is stable	-	-	-	-	

Solution	Preparation
Flow buffer	10 mM HEPES pH 7.4, 150 mM NaCl, 3.4 mM EDTA, 0.005% P20

References

1. BIACORE AB; BIACORE Application Handbook; 1998
2. BIACORE AB; BIACORE Getting Started; 1998
3. BIACORE AB; BIACORE Instrument Handbook; 1998

Disclaimer