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PCR Protocol Template V.3

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Kathleen Pitz¹, Raïssa Meyer²

¹Monterey Bay Aquarium Research Institute; ²AWI

Better Biomolecular Ocea...



Kathleen Pitz
Monterey Bay Aquarium Research Institute

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Protocol status: Working
We use this protocol and it's working

Created: February 14, 2024

Last Modified: August 23, 2024

Protocol Integer ID: 95251

Abstract

A protocol template created through the BeBOP project for PCR.

Main protocol steps begin below the "Standard Operating Procedure" section.

A detailed description of the BeBOP project and these templates is available here: <https://github.com/BeBOP-OBON/>

Guidelines

test

Materials

test

MIOP: Minimum Information about an Omics Protocol

1

MIOP Term	Value
methodology category	
project	
purpose	
analyses	
geographic location	
broad-scale environmental context	
local environmental context	
environmental medium	
target	
creator	
materials required	
skills required	
time required	
personnel required	
language	
issued	
audience	
publisher	
hasVersion	
license	
maturity level	

See [MIOP definition.md](#) for term definitions. The terms "methodology category" and "maturity level" have controlled vocabulary.

AUTHORS

2

PREPARED BY All authors known to have contributed to the preparation of this protocol, including those who filled in the template.	AFFILIATION	ORCID (visit https://orcid.org/ to re
Content Cell	Content Cell	Content Cell
Content Cell	Content Cell	Content Cell

RELATED PROTOCOLS

3

PROTOCOL NAME AND LINK	ISSUER / AUTHOR	RELEASE DATE This is the date corresponding to the version listed to the left
Content Cell	Content Cell	yyyy-mm-dd
Content Cell	Content Cell	yyyy-mm-dd

This is a list of other protocols which should be known to users of this protocol. Please include the link to each related protocol.

BACKGROUND

4 **Summary**

Insert a short description of the background for the method/protocol (e.g. why and for which purpose do you perform water sampling).

Please provide a brief summary of your method including, as appropriate, a brief description of what techniques your best practice is about, which ocean environments or regions it targets,

the primary sensors covered, what type of data/measurements/observing platform it covers, limits to its applicability.

5 Method description and rationale

Insert a short description of the functioning principal of the methodology used in the protocol (i.e. how does the method work?). Please note that this is different from the step-by-step description of the protocol procedure.

Insert a short statement explaining why the specific methodology used in the protocol has been selected (e.g. it is highly reproducible, highly accurate, procedures are easy to execute etc....).

6 Spatial coverage and environment(s) of relevance

If applicable, please specify the region where the protocol is applied. For regional term guidance see here. If applicable, please indicate here the environment(s) of relevance for the protocol, e.g. Abyssal plain. Select from the ENVO terminology.

<https://www.ebi.ac.uk/ols/ontologies/envo>

7 Personnel Required

Insert the number of technicians, data managers, and scientists required for the good execution of the procedure

8 Safety

Identify hazards associated with the procedure and specify protective equipment and safety training required to safely execute the procedure

9 Training requirements

Specify technical training required for the good execution of the procedure.

10 Time needed to execute the procedure

Specify how much time is necessary to execute the procedure.

EQUIPMENT

11

DESCRIPTION e.g. filter	PRODUCT NAME AND MODEL Provide the official name of the product	MANUFACTURER Provide the name of the manufacturer of the product.	QUANTITY
Durable equipment			
Content Cell	Content Cell	Content Cell	Content Ce
Content Cell	Content Cell	Content Cell	Content Ce
Consumable equipme nt			
Content Cell	Content Cell	Content Cell	Content Ce
Content Cell	Content Cell	Content Cell	Content Ce
Chemicals			
Content Cell	Content Cell	Content Cell	Content Ce
Content Cell	Content Cell	Content Cell	Content Ce

STANDARD OPERATING PROCEDURE

12 In the following SOP, please use the exact names of equipment as noted in the table above.

Provide a step-by-step description of the protocol. The identification of difficult steps in the protocol and the provision of recommendations for the execution of those steps are encouraged.

PREPARATION

13 Please specify the preparatory actions you took before you collected the samples and note what equipment was needed to do so (e.g. disinfection of work surfaces, preparations to the equipment you intend to use later on).

Step



14 Step

15 Step

PCR

16 Please specify the actions you took to amplify the previously extracted DNA and the equipment and primers you used (ingredients for the PCR reaction, number of triplicates, PCR cycle parameter)

Primers: PCR primer name, direction, and sequence

PCR Primer Name	Direction	Sequence (5' -> 3')
content	forward	content
content	reverse	content

17 **PCR Cycling Program:** PCR step, temperature, duration, and number of cycles

PCR step	Temperature	Duration	Repetition
content	content	content	content
content	content	content	content

18 **Reaction Mixture:** PCR reagents, volumes, initial and final concentrations

reagent	volume	initial concentration	final concentration
content	content	content	content
content	content	content	content
content	content	content	content
content	content	content	content

19 Step

PCR clean-up

20 Please specify the actions you took to confirm the quality of the PCR output, to clean up the PCR output and the equipment you used (e.g. agarose gel to confirm quality, purification of PCR products).

QUALITY CONTROL

21 Describe and explain criteria used to validate results of the standard operating procedure.

BASIC TROUBLESHOOTING GUIDE

22 Identify known issues associated with the procedure, if any.

Provide troubleshooting guidelines when available.

ACRONYMS AND ABBREVIATIONS

23

ACRONYM / ABBREVIATION	DEFINITION
Content Cell	Content Cell

GLOSSARY



24

SPECIALISED TERM	DEFINITION
Content Cell	Content Cell
Content Cell	Content Cell

REFERENCES

25 Insert all references cited in the document.

Please insert full DOI address when available, e.g. <http://doi.dx.org/10.1007/s11258-014-0404-1>

APPENDIX A: DATASHEETS

26 Link templates (e.g. preformatted spreadsheets) used to record measurements and report on the quality of the data as well as any documents such as manufacturer specifications, images, etc that support this protocol. Please include a short note describing the document's relevance.