

# BIO-X-ACT™ Short Mix

Shipping: On Dry/Blue Ice Catalog numbers

Batch No.: See vial BIO-25026 : 500 x 50 µl reactions: (10 x 1.25 ml)

Concentration: 2x



A Meridian Life Science® Company

Store at -20°C

## Storage and stability:

The BIO-X-ACT Short Mix is shipped on dry/blue ice. On arrival store at -20 °C for optimum stability. Repeated freeze/thaw cycles should be avoided.

## Expiry:

When stored under the recommended conditions and handled correctly, full activity of the kit is retained until the expiry date on the outer box label.

## Safety precautions:

Please refer to the material safety data sheet for further information.

## Quality control specifications:

BIO-X-ACT Short Mix and its components are extensively tested for activity, processivity, efficiency, sensitivity, absence of nuclease contamination and absence of nucleic acid contamination prior to release.

## Notes:

Research use only.

BIO-X-ACT is a trademark of Bioline Reagents Ltd.

## Features

- Amplifies fragments up to 5 kb
- Convenient pre-mixed, pre-optimized 2x solutions
- Reduced risk of contamination
- Dramatically decreases the time required for reaction setup
- Reproducible results

## Applications

- Routine PCR applications
- Products suitable for cloning
- High throughput

## Description

BIO-X-ACT™ Short Mix is a complete ready-to-use 2x reaction mix, which enables PCR assays to be performed on problematic templates, with the simple addition of water, template and primers. In order to achieve optimal reaction conditions, BIO-X-ACT Short Mix contains BIO-X-ACT Short DNA Polymerase, MgCl<sub>2</sub>, ultrapure dNTPs manufactured by Bioline as well as further additives. The mix has been optimized for a wide variety of templates, and an additional 50 mM MgCl<sub>2</sub> solution is included should any fine adjustments be required.

BIO-X-ACT Short Mix dramatically reduces the time needed to set up reactions, thereby minimizing the risk of contamination. Greater reproducibility is ensured, by a reduction in the number of pipetting steps that can lead to pipetting errors.

## Components

	500 Reactions
BIO-X-ACT Short Mix	10 x 1.25 ml
50mM MgCl <sub>2</sub> Solution	1.2 ml

## BIO-X-ACT Short Mix Protocol

### Reaction Conditions (For a 50 µl reaction)

The optimal conditions will vary from reaction to reaction and are dependent on the system used. Each parameter has to be adjusted individually and some optimization may be required.

BIO-X-ACT Short Mix	25 µl
Template and Primers	as required
Water (ddH <sub>2</sub> O)	up to 50 µl

Denature: 94-97 °C

Extension: 72 °C Allowing 30-50 seconds per Kb

For optimal resolution of PCR products, we recommend the use of Tris-Acetate EDTA (TAE) buffer for gel preparation and electrophoresis.

The Mg<sup>2+</sup> concentration in the 2x mix is 4 mM (2 mM final concentration), this is the optimum concentration for BioMix and should only be adjusted if absolutely necessary. The table below shows the volume of additional MgCl<sub>2</sub> to add to a 50 µl reaction to achieve different final concentrations.

Final Magnesium concentration required	Volume of 50mM MgCl <sub>2</sub> to add to a 50µl final reaction volume
2.0 mM	0
2.5 mM	0.5 µl
3.0 mM	1 µl

**This data is intended for use as a guide only; conditions will vary from reaction to reaction and may need optimization.**

## Product Citations:

1. Griffin, P. & Hoffmann, A. *Annals of Botany*, **113(6)**: 953-65 (2014).
2. Walters, D.M., *et al. PloS one*, **8(10)**: e77065 (2013).
3. Rossmassler, K., *et al. FEMS Microbiol. Ecol.* **79(2)**: 421-432 (2012).
4. Cho, E.J., *et al. Molecules Cells* **32(5)**: 459-475 (2011).
5. Grosse, C., *et al. Appl. Environ. Microbiol.* **74(15)**: 4923-4933 (2008).
6. Oliver, M.K. & Piertney, S.B. *Immunogene.* **58**: 390-395 (2006).
7. Donato, G.M., *et al. J. Bacteriol.* **187(22)**: 7579-7588 (2005).
8. Gow, J.L., *et al. Genetica* **124(1)**: 77-83 (2005).

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