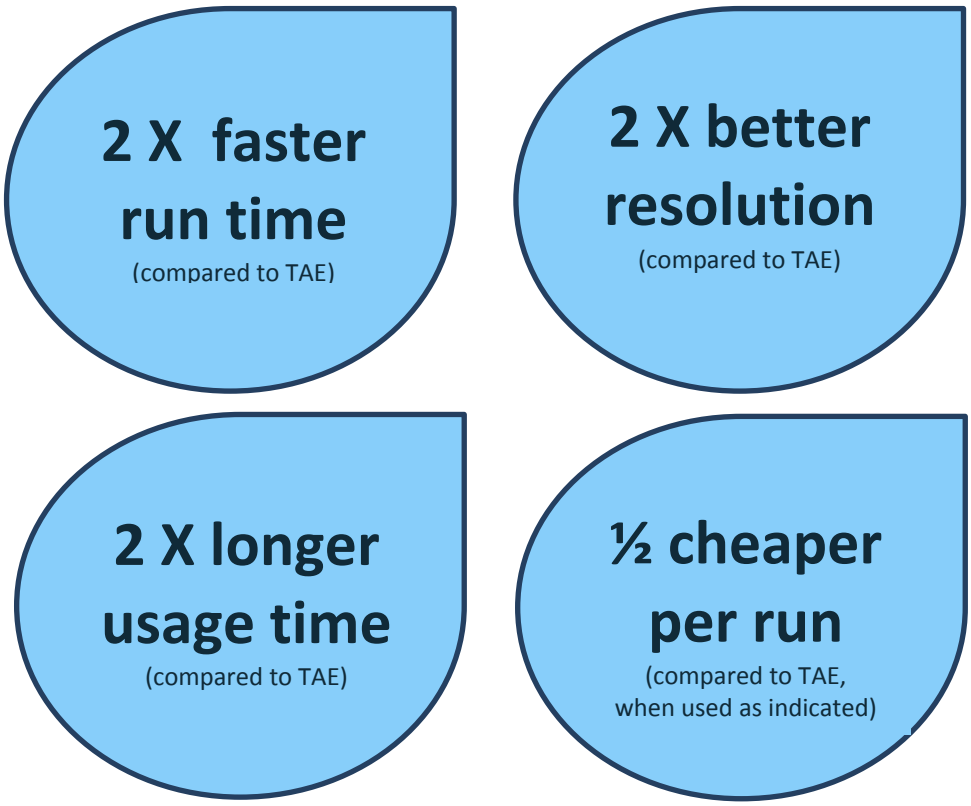
USER GUIDE

DireCtQuant NAE

Nucleic acids electrophoresis reagent system



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Contents

ABOUT Dire*Ct*Quant NAE

Dire*Ct*Quant nucleic acid electrophoresis buffer (Ref **#DCQNAE**) is an innovative formula providing far superior speed and resolution comparing to established formulas as TAE, TBE, etc. With **Dire*Ct*Quant NAE** can be achieved twice as better resolution of DNA/RNA fragments and the separation time can be reduced at least two times using a very similar workflow and standard equipment. The buffer generates much less heat during the electrophoresis and is having very high buffering capacity which protects the sample during the electrophoresis. The buffer is supplied with 2X nucleic acid electrophoresis sample loading dye NAEL (Ref **#DCQNAEL**). This dye is having very low viscosity allowing easy sample preparation and loading and contains fast migrating red tracking dye .

One set of **Dire*Ct*Quant NAE** provides the necessary reagents for at least 250 complete mini gels (10 cm x 8 cm):

Ref. **#DCQNAE** 50X Electrophoresis buffer 1 x 2 L

Ref. **#DCQNAEL** 2X Sample loading buffer 1 X 20 ml

COMPONENTS AND EQUIPMENT TO BE PROVIDED BY THE USER

- Electrophoresis system capable of accommodating your gels

! **IMPORTANT:** Carefully check the maximum safety limits (voltage, current and power) of your electrophoretic equipment (power supply, electrophoresis chamber). Do not use this system with equipment that cannot safely provide the conditions listed in this protocol. Not following these precautions can result in poor performance and could lead to equipment failure and/or personal injury!

- Agarose
- Distilled Water
- Microwave or hot plate
- Pipette set
- Nucleic acid staining reagent
- Gel visualisation system
- Personal protective equipment

GEL AND SAMPLE PREPARATION

1. **Dilute the electrophoresis buffer by diluting Dire*Ct*Quant NAE 50 times with distilled water. For example, for preparing 1 litre of 1X working buffer to 20 ml of 50X Dire*Ct*Quant NAE add 980 ml of distilled water. Mix well.**

2. **Use the prepared 1X buffer to prepare your agarose gel and to fill the electrophoresis tank. You can include nucleic staining reagent in your gel or stain after electrophoresis.**

3. **Add to your sample equal volume of Dire*Ct*Quant NAEL loading buffer 2X (e.g. for 20 µl sample add 20 µl 2X DCQNAEL). Mix well.**

4. **Load the prepared samples on the gel.**

5. **Apply up to 15 V/cm (for example using mini gel equipment with the distance between the electrodes of 15 cm, you can apply 225V).**

! **IMPORTANT:** *Never exceed the maximal voltage/current limits of your equipment. This can result in damage of your equipment or personal injury!*

6. **Follow the separation by the migration of the red front. The migration of the dye is indicative for the migration of 50 bp dsDNA. Stop the electrophoresis when the tracking dye reaches the end of the gel. Full separation is usually achieved in 10-15 minutes.**

7. **Visualize the nucleic acids bands as with gel documentation system of your choice. The loading buffer DCQNAEL contains unique fast, non-fluorescent migrating dye. It migrates in front of the smallest DNA/RNA fragment resolvable on agarose electrophoresis. It doesn't create any bands on the gel images, making possible correct detection and densitometry analysis of the whole gel. In contrast Bromphenol blue and Xylene cyanol FF based loading buffers exhibit 3-4Kbp. and 200-300bp. bands interfering with fragment detection and quantification.**

8. **Due to very high buffering capacity the NAE buffer can be reused at least 3X times without detectable changes in performance, pH and conductivity. Mix the buffer in the electrophoresis cuvette if planned to be reused.**

The system is compatible with all common nucleic acids dyes (ethidium bromide, SYBR Safe, GelRed*, *etc.*) and downstream applications (purification from gel, Northern Blot, Southern Blot, etc.)

**SYBR safe and GelRed are a trademarks of Invitrogen and Biotium respectively.*

GENERAL STATEMENT

Handle our products in accordance with safe laboratory practices:
***wear* suitable *protective gloves, safety googles* and protective *clothing*.**

Please read and understand the MSDS data provided and updated at directquant.eu

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In case of any doubt please feel free to contact Dire*Ct*Quant team at:
customersupport@directquant.eu