

PowerCut™ Dicer

Product codes:

F-602S, 60 U

F-602L, 300 U

Stable for six months from the assay date. Store at -20°C.

1. Description

PowerCut™ Dicer is a recombinant endoribonuclease originating from *Giardia intestinalis*. It cleaves dsRNA to small interfering RNA (siRNA) with a 100 % efficiency. The produced siRNA fragments have a length of 25–27 nucleotides, and are capable of triggering RNA interference when transfected into cells.

2. Package information

F-602S	60 U (1 U/μl) Material provided: PowerCut™ Dicer 60 U (60 μl), 5x PowerCut™ Dicer Reaction Buffer (1 x 500 μl).
F-602L	300 U (1 U/μl) Material provided: PowerCut™ Dicer 300 U (300 μl), 5x PowerCut™ Dicer Reaction Buffer (1 x 500 μl).

Material safety datasheet (MSDS) is available at www.finnzymes.com.

3. Guidelines for using PowerCut™ Dicer

3.1 Reaction protocol

Make sure to avoid contaminating RNases when setting up the reactions.

Table 1. Pipetting instructions.

Component	20 μl reaction	Final concentration
H ₂ O (RNase free)	add to 20 μl	
5x PowerCut™ Dicer Reaction Buffer	4 μl	1x
dsRNA	X μl	4 μg
PowerCut™ Dicer 1U/μl	4 μl	4 U

Incubate at 37°C for 16 h, preferably in a heat block. Purify the siRNA using standard methods.

3.2. Agarose gel analysis of the reactions

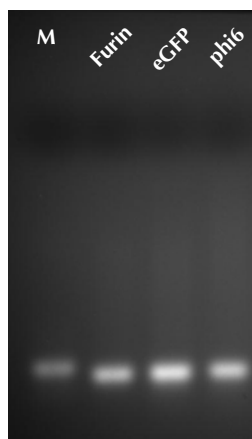


Figure 1. A dicing reaction was performed using dsRNA from 193 bp furin, 812 bp eGFP and phi6 as substrates. The reactions were assembled and incubated according to the standard protocol, and unpurified aliquots were run on a 2 % agarose gel. No uncut substrate is seen in the reactions demonstrating 100 % cleaving efficiency. M denotes a 27-bp RNA marker.

4. Component specifications

PowerCut Dicer enzyme is purified from an *E. coli* strain expressing the cloned PowerCut Dicer gene from *Giardia intestinalis*.

Storage buffer: 50 mM Tris-HCl pH 8 (25°C), 50 mM NaCl, 5 mM MgCl₂, 0.2 mg/ml BSA, 50 % glycerol.

Reaction buffer: 5x PowerCut Dicer Reaction Buffer.

Unit definition: One unit is defined as the amount of enzyme that is needed to completely cleave 1 μg of 192 bp double-stranded RNA substrate to siRNA in 16 hours at 37°C.

Exonuclease contamination assay: Incubation of 1 U of PowerCut Dicer (4 h, 37°C, 50 μl) with 1 μg of sonicated [³H]-DNA (3x10⁵ cpm/μg) in the assay buffer released <0.5 % of radioactivity.

Endonuclease contamination assay: Incubation of 1 U of PowerCut Dicer (4 h, 37°C, 50 μl) with 1 μg of ΦX174 RFI DNA in the assay buffer resulted in <10 % conversion to RFI form.

Ribonuclease contamination assay: Incubation of short ssRNA in the presence or absence of 1 U of PowerCut Dicer (1 h, 37°C, 20 μl) in the assay buffer produced similar results.

Shipping and storage

PowerCut Dicer is shipped on gel ice. Upon arrival, store the components at -20°C. PowerCut Dicer is stable for six months from the assay date when stored and handled properly.

Warranty

Finnzymes Oy warrants that its products will meet the specifications stated on the technical data section of the data sheets, and Finnzymes Oy agrees to replace the products free of charge if the products do not conform to the specifications. Notice for replacement must be given within 60 days of receipt. In consideration of the above commitments by Finnzymes Oy, the buyer agrees to and accepts the following conditions:

- That this warranty is in lieu of all other warranties, express or implied;
- That **ALL WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED AND WAIVED**;
- That the buyer's sole remedy shall be to obtain replacement of the product free of charge from Finnzymes Oy; and
- That this remedy is in lieu of all other remedies or claims for damages, consequential or otherwise, which the buyer may have against Finnzymes Oy.

Exclusive terms of sale

Finnzymes Oy does not agree to and is not bound by any other terms or conditions, unless those terms and conditions have been expressly agreed to in writing by a duly authorised officer of Finnzymes Oy. Prices are subject to change without notice.

Recommended guidelines for safe use of the products

Finnzymes Oy recommends that the buyer and other persons using the products follow the Guidelines for Research involving Recombinant DNA Molecules (NIH guidelines) Federal Register, July 5, 1994 (59 FR 34496) and any amendments thereto. Finnzymes Oy disclaims any and all responsibility for any injury or damage which may be caused by the failure of the buyer or any other person to follow said guidelines.

Research use only

Since these products are intended for research purposes by qualified persons, the Environmental Protection Agency does not require us to supply Premanufacturing Notice.

Notice to user

The information presented here is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine for himself or herself the suitability of any material and/or procedure for a specific purpose and to adopt such safety precautions as may be necessary.

Disclaimer

The use of this product in some applications may require a license from third parties. Purchase of this product does not provide any such license. Further information on purchasing licenses to practice a specific technology must be obtained from the appropriate intellectual property owners of such technology.

PowerCut™ Dicer is a trademark of Finnzymes Oy, a Thermo Fisher Scientific company.

The quality system of Finnzymes Oy is certified according to standard SFS-EN ISO9001:2008.

Version 1.2, September 2010