

peroxiredoxin

Cat. No. EXWM-0496 Lot. No. (See product label)

Introduction

Description	Peroxiredoxins (Prxs) are a ubiquitous family of antioxidant proteins. They can be divided into three classes: typical 2-Cys, atypical 2-Cys and 1-Cys peroxiredoxins. The peroxidase reaction comprises two steps centred around a redox-active cysteine called the peroxidatic cysteine. All three peroxiredoxin classes have the first step in common, in which the peroxidatic cysteine attacks the peroxide substrate and is oxidized to S-hydroxycysteine (a sulfenic acid) (see mechanism). The second step of the peroxidase reaction, the regeneration of cysteine from S-hydroxycysteine, distinguishes the three peroxiredoxin classes. For typical 2-Cys Prxs, in the second step, the peroxidatic S-hydroxycysteine from one subunit is attacked by the 'resolving' cysteine located in the C-terminus of the second subunit, to form an intersubunit disulfide bond, which is then reduced by one of several cell-specific thiol-containing reductants (R'-SH) (e.g. thioredoxin, AhpF, tryparedoxin or AhpD), completing the catalytic cycle. In the atypical 2-Cys Prxs, both the peroxidatic cysteine and its resolving cysteine are in the same polypeptide, so their reaction forms an intrachain disulfide bond. To recycle the disulfide, known atypical 2-Cys Prxs appear to use thioredoxin as an electron donor. The 1-Cys Prxs conserve only the peroxidatic cysteine, so that its oxidized form is directly reduced to cysteine by the reductant molecule.
Synonyms	thioredoxin peroxidase; tryparedoxin peroxidase; alkyl hydroperoxide reductase C22; AhpC; TrxPx; TXNPx; Prx; PRDX
Product Information	
Form	Liquid or lyophilized powder
EC Number	EC 1.11.1.15
CAS No.	207137-51-7
Reaction	2 R'-SH + ROOH = R'-S-S-R' + H2O + ROH
Notes	This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.

Storage and Shipping Information

StorageStore it at +4 °C for short term. For long term storage, store it at -20 °C~-80 °C.