

# Shrimp Alkaline Phosphatase

ArcticZymes Shrimp Alkaline Phosphatase (SAP) is the only heat-labile, all-purpose alkaline phosphatase purified from a recombinant source and originally isolated from *Pandalus borealis* (Arctic shrimp). The recombinant production leads to increased storage stability, low batch-to-batch variations and high specific activity. For added flexibility, when lyophilisation may be desired, SAP is also available in a Glycerol FREE format.

## Cloning

SAP offers greater convenience to cloning procedures, since the enzyme may be completely inactivated by a simple heating step. SAP is active in all buffers used for restriction enzymes, and can be added either during restriction digestion, or directly after. With SAP, the user can forget elaborate calculations and multistep incubations, because the enzyme completely dephosphorylates DNA during one, simple, incubation.

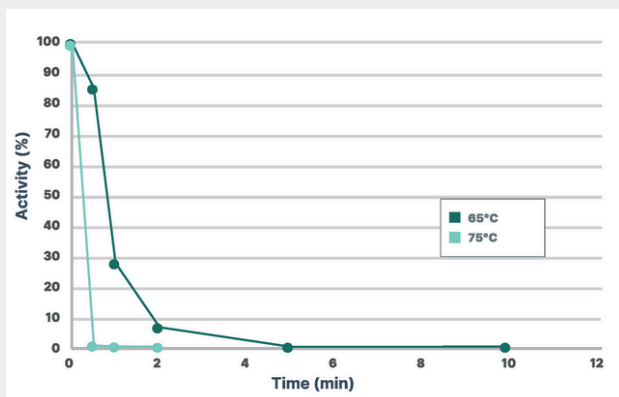


Fig 1. Heat inactivation of SAP at 65°C and 75°C

SAP is useful in many molecular biology applications by offering fast and easy dephosphorylation of DNA, RNA and nucleotides. SAP is also active in most restriction enzyme buffers and is completely and irreversibly inactivated after 5 minutes at 65°C. This property simplifies most workflows involving alkaline phosphatase treatment.



**Heat-inactivated**  
100% heat-inactivated  
at 65°C



**Enzyme buffers**  
Works in restriction  
enzyme buffers



**Clean-up**  
Used in PCR clean-up



**Removes 5'-phosphates**  
from DNA, RNA, dNTPs and  
dephosphorylates proteins



**Glycerol FREE**  
Also available in Glycerol  
FREE formulation

## Enzymatic cleanup of PCR products before sequencing

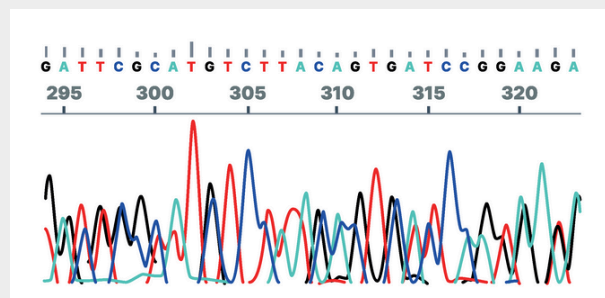
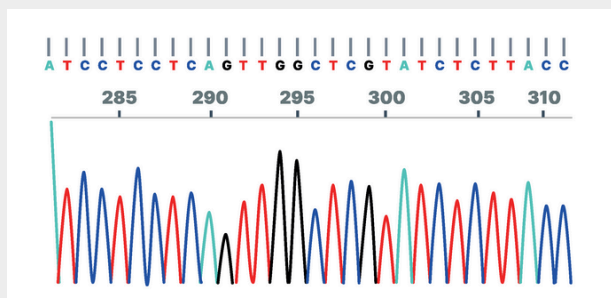


Fig 2. PCR cleanup is important prior to sequencing

Panel A shows a sample that has undergone treatment with SAP and Exonuclease I, while panel B shows a sample without this treatment. Treatment with SAP and Exonuclease I resulted in significant improvement in overall sequence quality.

## Enzymatic cleanup of PCR products before sequencing

Enzymatic cleanup of a PCR product before sequencing eliminates the need for time consuming purification via gels, columns or beads. Simply add SAP and Exonuclease I to your PCR-product and incubate at 37°C for 10 minutes to digest excess primers and nucleotides. Both enzymes are finally inactivated by heating, and the PCR-product is ready for sequencing. The treatment can be done in a single reaction tube, so no further processing is necessary. This enzymatic protocol yields 100% product recovery even for very short PCR products. This PCR cleanup-protocol may also be useful in genotyping and mass spectrometry-based assays.

## Ordering information

	Article no.	Pack Size	Concentration
<b>SAP</b>	70700-201	1000 U	1 U/ $\mu$ l
	70700-202	5000 U	1 U/ $\mu$ l
	70700-203	25 kU	1 U/ $\mu$ l
	70700-101	200 kU	1 U/ $\mu$ l
	70700-100	Custom	Custom
<b>SAP Glycerol FREE</b>	70710-201	5000 U	$\geq$ 20 U/ $\mu$ l
	70710-100	Custom	Custom

\*One Unit will convert 1  $\mu$ mol of p-nitrophenyl phosphate per minute to nitrophenol and phosphate at 37°C and pH 10.4 in 0.1 M glycine buffer, 1 mM each of ZnCl<sub>2</sub>, MgCl<sub>2</sub>, and 6 mM 4-nitrophenyl phosphate.

## Your OEM partner to deliver novel solutions for genomics and proteomics.

### Quality

ArcticZymes is dedicated to the quality of its products and is certified according to ISO 13485:2016. ArcticZymes offers the convenience of providing standard bulk enzymes as off the shelf products. In addition, ArcticZymes offers enzymes in customized formats. For additional information, please contact us.

### Contact information

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### Additional Information

We are pleased to provide data and information relating to ArcticZymes Shrimp Alkaline Phosphatase. Available data includes stability, buffer storage conditions, pH, and specific activity data. For more information, please visit [www.arcticzymes.com](http://www.arcticzymes.com).

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