

# PRODUCT INFORMATION



## SAMS Peptide

Item No. 17061

CAS Registry No.: 125911-68-4

Formal Name: L-histidyl-L-methionyl-L-arginyl-L-seryl-L-alanyl-L-methionyl-L-serylglycyl-L-leucyl-L-histidyl-L-leucyl-L-valyl-L-lysyl-L-arginyl-L-arginine

H—His—Met—Arg—Ser—Ala—Met—Ser—Gly—  
Leu—His—Leu—Val—Lys—Arg—Arg—OH

MF:  $C_{74}H_{131}N_{29}O_{18}S_2$

FW: 1,779.2

Purity:  $\geq 95\%$

Supplied as: A crystalline solid

Storage:  $-20^{\circ}C$

Stability:  $\geq 4$  years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

SAMS peptide is supplied as a crystalline solid. A stock solution may be made by dissolving the SAMS peptide in the solvent of choice, which should be purged with an inert gas. SAMS peptide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of SAMS peptide in ethanol is approximately 1 mg/ml and approximately 15 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of SAMS peptide can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of SAMS peptide in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

AMP-activated protein kinase (AMPK) plays a role in energy metabolism and glucose homeostasis by monitoring the ratio of ATP to AMP. This kinase can inactivate HMG-CoA reductase and acetyl-CoA carboxylase as well as block the activation of hormone-sensitive lipase by cyclic-AMP-dependent protein kinase (protein kinase A or PKA). SAMS peptide is a synthetic peptide substrate for AMPK based on the sequence around Ser<sup>79</sup> (which is phosphorylated exclusively by AMPK) on acetyl-CoA carboxylase.<sup>1</sup> In this sequence, Ser<sup>77</sup> (which is phosphorylated exclusively by PKA) is replaced by alanine to eliminate a neighboring binding site for PKA.<sup>1</sup> This substitution yields a substrate more specific for AMPK than acetyl-CoA carboxylase itself. SAMS peptide is phosphorylated rapidly by AMPK, providing a convenient and sensitive tool for assaying AMPK activity.<sup>2</sup>

### References

1. Davies, S.P., Carling, D., and Hardie, D.G. Tissue distribution of the AMP-activated protein kinase, and lack of activation by cyclic-AMP-dependent protein kinase, studied using a specific and sensitive peptide assay. *Eur. J. Biochem.* **186(1-2)**, 123-128 (1989).
2. Carling, D., Clarke, P.R., Zammit, V.A., *et al.* Purification and characterization of the AMP-activated protein kinase. Copurification of acetyl-CoA carboxylase kinase and 3-hydroxy-3-methylglutaryl-CoA reductase kinase activities. *Eur. J. Biochem.* **186(1-2)**, 129-136 (1989).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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