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**Product Data Sheet**


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Product Name: C3a 70-77 (Complement 3a (70-77))

Cat. No.: GC31928

**Chemical Properties**

Cas. No. 63555-63-5

SMILES Ala-Ser-His-Leu-Gly-Leu-Ala-Arg

Formula C<sub>35</sub>H<sub>61</sub>N<sub>13</sub>O<sub>10</sub> M.Wt 823.94

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Kinase experiment:**

2×10<sup>5</sup> mononuclear leukocytes in 0.2 mL of M199-HPS containing 15% (vol/vol) AB-positive serum are added to each well of microtiter plates without or with 10 µg/mL of Con A, PHA, or SK-SD and incubated at 37°C in 5% CO<sub>2</sub>:95% air. C3a or C3a(70-77) is introduced into some suspensions at the same time as the stimulus or buffer. After 3 d for the mitogen-stimulated cultures and 5 d for the SK-SD-stimulated cultures, 1 µCi of [3H]thymidine is added to each well. After an additional 16 h at 37°C, the uptake of [3H]thymidine is analyzed by aspirating the contents of each well with a Mash II harvester that collected and lysed the leukocytes on glass fiber filters. The radioactivity in each filter is quantified, and the results for quadruplicate chambers are expressed as mean cpm+SEM[1].

**Caution: Product has not been fully validated for medical applications. For research use only.**

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### References:

[1]. Payan DG, et al. Modulation of human lymphocyte function by C3a and C3a(70-77). J Exp Med. 1982 Sep 1;156(3):756-65.

[2]. Caporale LH, et al. The active site of C3a anaphylatoxin. J Biol Chem. 1980 Nov 25;255(22):10758-63.

### Background

C3a (70-77) is an octapeptide corresponding to the COOH terminus of C3a, exhibits the specificity and 1 to 2% biologic activities of C3a.

The direct interaction of C3a(70-77) with human mononuclear leukocytes in culture results in a concentration-dependent inhibition of the generation of LIF evoked by mitogens and by the antigen SK-SD. The extent of suppression of LIF generation by C3a(70-77) is significant at concentrations of  $10^{-7}$  M or higher and exceeds 75% at  $10^{-6}$  M, irrespective of the stimulus[1]. C3a (70-77), an octapeptide corresponding to the COOH terminus of human C3a, exhibits the specificity and biologic activities of C3a. Although lacking 69 residues at the NH<sub>2</sub> terminus, it maintains 1 to 2% of the activity of natural human C3a. C3a (70-77), Ala-Ser-HisLeu-Gly-Leu-Ala-Arg, induces histamine release and degranulation of rat mast cells, promotes contraction of guinea pig ileal tissue, and enhances vascular permeability in human skin. C3a (70-77) selectively

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desensitizes ileal smooth muscle to C3a but not to human C5a, a related anaphylatoxin. Conversely, C3a-(70-77) is unable to contract ileal smooth muscle pretreated with natural C3a. This cross-desensitization indicates a specific interaction of C3a (70-77) with cellular C3a binding sites[2].

[1]. Payan DG, et al. Modulation of human lymphocyte function by C3a and C3a(70-77). J Exp Med. 1982 Sep 1;156(3):756-65. [2]. Caporale LH, et al. The active site of C3a anaphylatoxin. J Biol Chem. 1980 Nov 25;255(22):10758-63.

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