

Product Data Sheet

BSA-Palmitate Saturated Fatty Acid Complex (5 mM)

Cat. No.:	C8676
Short Summary:	A BSA complex with palmitic acid
Synonyms:	BSA-PA, Bovine Serum Albumin-Palmitate
Appearance:	5 mM Palmitate:0.8 mM BSA (6:1 palmitate:BSA) in 150 mM sodium chloride, pH 7.4
Concentration:	5 mM
Storage:	-20°C
Shelf life:	≥2 years
Item Origin:	Animal/Bovine
Applications:	Lipotoxicity, insulin resistance, fatty-acid metabolism, ER stress, apoptosis, autophagy, inflammation, and metabolic dysfunction.

Biological Activity

Short summary

BSA-Palmitate Saturated Fatty Acid Complex is composed of palmitic acid and fatty acid-free bovine serum albumin (BSA) at an approximate molar ratio of 6:1 (palmitate:BSA). This complex has been widely utilized for efficient fatty acid delivery to cultured cells, facilitating the study of fatty acid oxidation and related metabolic processes in various cellular models. BSA and BSA-fatty acid complexes are suitable for use in short-term cell culture applications (acute treatments for up to 18 hours). However, for long-term applications (exceeding 25 hours), it is recommended that the product be filter-sterilized using a 0.2 µm filter and a sterile receptacle; this procedure does not compromise the performance of the complex. For optimal results, it is advisable to use this product in conjunction with a BSA control when working with BSA-fatty acid complexes (5 mM).

In Vitro

Cell Viability Assay

Cell Line:	HepG2
Preparation method:	For the mitochondrial ROS experiment, approximately 1×10^5 HepG2 cells/well were initially cultured in 24-well plates for 18 h, followed by 24 h miR-29a/control transfection. The medium was then replaced with 800 µL DMEM (supplemented with 10% heat-inactivated FBS, GlutaMAX, and antibiotic-antimycotic) containing 600 µM BSA-bound palmitic acid or DMEM without BSA-PA. Cells were incubated with BSA-PA for 25 h. After BSA-PA treatment, the cells were washed with PBS and incubated with 5 µM MitoSOX Red in 800 µL DMEM/F12 containing GlutaMAX but

		no serum or antibiotics for 30 min at 37 °C in the dark. The cells were subsequently washed and imaged by fluorescence microscopy.
	Reacting conditions:	600 µM, 25h
	Applications:	BSA-PA increased mitochondrial ROS, promoted mitochondrial dsRNA release, upregulated MAVS signaling, and induced downstream inflammatory signaling.
In Vivo	Animal experiment	
	Animal models:	6-week-old BALB/c mice
	Dosage form:	Tail vein injection
	Applications:	BSA-PA-treated mice exhibited elevated long-chain fatty acids (VLCFAs) in hepatic tissue. BSA-PA increased TCF19, ELOVL1, HACD3, serum triglyceride, hepatic inflammation, LOX activity and collagen deposition. BSA-PA also induced an ER-stress response.
	Preparation method:	10 mg/kg, 7 days
	Other notes:	The technical data provided above is for reference only.

Notes: The above experimental data are sourced from the literature and have not been independently validated by APExBIO. They are intended for reference purposes only.

References

1. Yang YL, Chuang YT, Huang YH. MicroRNA 29a alleviates mitochondrial stress in diet-induced NAFLD by inhibiting the MAVS pathway. Eur J Pharmacol. 2024 Nov 5;982:176955. doi: 10.1016/j.ejphar.2024.176955. Epub 2024 Aug 28. PMID: 39209098.
2. Mondal, A., Chakraborty, A., Nandi, S. et al. Transcription factor 19 modulates fatty acid elongation and unfolded protein response to attenuate palmitic acid-induced hepatic dysfunction. Nat Commun 17, 5596 (2026). <https://doi.org/10.1038/s41467-026-72138-9>

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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