

## CD31 TFA

Cat. No.:	HY-P3444A
Molecular Formula:	C <sub>121</sub> H <sub>203</sub> F <sub>3</sub> N <sub>36</sub> O <sub>31</sub>
Molecular Weight:	2715.12
Sequence Shortening:	NHASSVPRSKILTVRVILAPWKK
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

### BIOLOGICAL ACTIVITY

<b>Description</b>	CD31 (PECAM-1) TFA is platelet endothelial cell adhesion molecule-1, serves as the endothelial cell-specific receptor of clostridium perfringens b-Toxin (CPB). CD31 TFA is also an ER-MP12 antigen, acts as a linker between mechanical stress, metabolism and inflammation. CD31 TFA peptide is able to sustain phosphorylation of the CD31 ITIM <sub>686</sub> and of SHP2 and to inhibit TCR-induced T-cell activation <sup>[1]-[5]</sup> .
<b>In Vitro</b>	<p>CD31 TFA is a trans-homophilic co-signaling protein at the crossroad between mechanical stress, metabolism and inflammation<sup>[1]</sup>.</p> <p>CD31 TFA is a ER-MP12 antigen, exerts function as promoting cell adhesion between endothelial cells, enabling transmigration of leukocytes across vascular endothelium, and producing signaling to up-regulation of other adhesion molecules in neighboring cells<sup>[2]</sup>.</p> <p>Clostridium perfringens b-toxin (CPB) is a highly active b-pore-forming toxin (b-PFT) and the essential virulence factor for fatal, necro-hemorrhagic enteritis<sup>[3]</sup>.</p> <p>CD31 TFA serves as the specific membrane receptor for clostridium perfringens b-toxin (CPB) on endothelial cells. CD31 TFA directly interacts with CPB, with the membrane proximal Ig6 domain<sup>[3]</sup>.</p> <p>CD31 TFA also serves as a therapeutic target in atherosclerosis<sup>[4]</sup>.</p> <p>CD31 TFA (0, 25, 50, 100 µg/mL) induces proliferative response to TCR engagement of human PBMCs in a dose-dependent manner<sup>[5]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### REFERENCES

- [1]. Caligiuri G. Mechanotransduction, immunoregulation, and metabolic functions of CD31 in cardiovascular pathophysiology. *Cardiovasc Res.* 2019 Jul 1. 115(9):1425-1434.
- [2]. Ling V, et al. Structural identification of the hematopoietic progenitor antigen ER-MP12 as the vascular endothelial adhesion molecule PECAM-1 (CD31). *Eur J Immunol.* 1997 Feb. 27(2):509-14.
- [3]. Bruggisser J, et al. CD31 (PECAM-1) Serves as the Endothelial Cell-Specific Receptor of Clostridium perfringens β-Toxin. *Cell Host Microbe.* 2020 Jul 8. 28(1):69-78.e6.
- [4]. Caligiuri G. CD31 as a Therapeutic Target in Atherosclerosis. *Circ Res.* 2020 Apr 24. 126(9):1178-1189.
- [5]. Fornasa G, et al. TCR stimulation drives cleavage and shedding of the ITIM receptor CD31. *J Immunol.* 2010 May 15. 184(10):5485-92.

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

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