

SS-31 — PHE-4 → TYR SUBSTITUTION AT THE C-TERMINAL AROMATIC RESIDUE, ADDING A PARA- HYDROXYL H-BOND DONOR TO ENGAGE THE SUBSTRATE-BINDING POCKET OF P-GLYCOPROTEIN (ABCB1)

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DISCARDED LONGEVITY

PHE-4 → TYR SUBSTITUTION AT THE C-TERMINAL AROMATIC RESIDUE, ADDING A PARA-HYDROXYL H-BOND DONOR TO ENGAGE THE SUBSTRATE-BINDING POCKET OF P-GLYCOPROTEIN (ABCB1)

MULTIDRUG RESISTANCE PROTEIN 1 (P-GLYCOPROTEIN, ABCB1)

AVERAGE CONFIDENCE	PTM / IPTM	VERDICT
—	— / —	DISCARDED
TARGET	UNIPROT	BINDING PROBABILITY
Multidrug resistance protein 1 (P-glycoprotein, ABCB1)	—	—

DISCARDED BY PREDICTABILITY GATE

target_not_predictable: no UniProt ID resolved — target identity unconfirmed

TLDR

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EXECUTIVE SUMMARY

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DETAILED ANALYSIS

no research brief recorded.

RESEARCH BRIEF

no research brief recorded.

SEQUENCES

NATIVE

DArgDmtLysPhe

MODIFIED

DArg-Dmt-Lys-Tyr

CITATIONS

1. **PMID** — (2020) — — Mitochondrial protein interaction landscape of SS-31
2. **PMID** — (2022) — — SS-31, a Mitochondria-Targeting Peptide, Ameliorates Kidney Disease
3. **PMID** — (2019) — — Elamipretide (SS-31) improves mitochondrial dysfunction, synaptic and memory impairment induced by lipopolysaccharide in mice
4. **PMID** — (2023) — — SS-31 Improves Cognitive Function in Sepsis-Associated Encephalopathy by Inhibiting the Drp1-NLRP3 Inflammasome Activation
5. **PMID** — (2024) — — Therapeutic Peptide SS-31 Modulates Membrane Binding and Aggregation of Alpha-Synuclein and Restores Impaired Mitochondrial Function
6. **PMID** — (2025) — — SS-31@Fer-1 Alleviates ferroptosis in hypoxia/reoxygenation cardiomyocytes via mitochondrial targeting
7. **PMID** — (2024) — — New insight for SS-31 in treating diabetic cardiomyopathy: Activation of mitoGPX4 and alleviation of mitochondria-dependent ferroptosis

8. **PMID** — (2021) — — SS-31 Protects Liver from Ischemia-Reperfusion Injury via Modulating Macrophage Polarization
9. **PMID** — (2025) — — SS-31 Targets NOS2 to Enhance Osteogenic Differentiation in Aged BMSCs by Restoring Mitochondrial Function
10. **PMID** — (2023) — — Protective effects of SS-31 on Post-Contrast Acute Kidney Injury in Diabetes Mice