

## Product Data Sheet

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<b>Cat#:</b>	AD-135-U
<b>Cat#:</b>	AD-135-B, Biotin labeled
<b>Cat#:</b>	AD-135-F, FITC labeled
<b>Product Description:</b>	Phospholamban (Apt-9)
<b>Aptamer Type:</b>	DNA
<b>Sequence:</b>	5'-TTGGGGAGGGGCACTGGGCAGTGTAAATTTACGAAAGCGAG-3'; 40-mer
<b>Size</b>	100 nM
<b>Mol. Wt:</b>	12546.21 g/mole
<b>Purity:</b>	>95%
<b>Affinity:</b>	20 nM (reported value)
<b>Comments:</b>	n/a

**Notes:** The sarco(endo)plasmic reticulum calcium ATPase (SERCA) 2a is responsible for Calcium uptake by this organelle and is inhibited in a reversible manner by phospholamban, another SR membrane protein. Alleviating the inhibitor protein is a potential therapy for cardiomyopathy and heart failure. Apt-9, was found to specifically bind to the cytoplasmic region of phospholamban in vitro with high affinity (dissociation constant, 20 nM). Apt-9 increased the Ca<sup>2+</sup>-dependent ATPase activity of cardiac SR vesicles but not that of SR vesicles from skeletal muscle in a concentration-dependent manner.

**References:** Tanaka et al. "In Vitro Selection and Characterization of DNA Aptamers Specific for Phospholamban." The Journal of Pharmacology and Experimental Therapeutics, 329(2009): 57-63.

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