

## Thickvein C Control Peptide

<b>Alternate names:</b>	Protein Decapentaplegic Ligand Receptor Thickvein C, TKV-C, Thick vein-C, Thickveins Isoform C
<b>Catalog No.:</b>	AP10339CP-N
<b>Quantity:</b>	0.1 mg
<b>Background:</b>	<p>Fruit fly (<i>Drosophila melanogaster</i>) ovaries contains two set of germline stem cells surrounded by a group of highly differentiated somatic cells that express genes for two phenotypes (hedgehog &amp; wingless). The TGF beta super family member, decapentaplegic (dpp) or its homologue BMP2/4 is specifically required for maintenance and promote its cell division in the female germline (1, 2). The Signaling by TGF beta-related factors requires ligand-induced association between type I and type II transmembrane receptors that have endogenous serine/threonine kinases activity. In <i>Drosophila</i>, thickveins (tkv) and saxophone (sax) genes encode type I receptors that mediate signaling by decapentaplegic (dpp), a member of the bone morphogenetic protein (BMP) subgroup of TGF beta-type factors. Patterning the dorsal surface of fruitfly blastoderm embryo requires Decapentaplegic (Dpp) and Screw (Scw), two BMP family members. The signaling by these ligands is mediated by Bone morphogenetic protein (BMP) binding proteins Sog and Tsg. It is demonstrated that Tsg and Sog play essential role in transport of heterodimer Dpp/Sog signaling through the two type I BMP receptors Tkv and SAX (3). Over expression or mutation in dpp suppress germline stem cell differentiation. Dpp actions are mediated by its receptor Saxophone. The Saxophone gene is expressed ubiquitously. The Saxophone gene also gives two products Brk43E and Berk25 and both gene products inter acts with TGF super family peptide ligands Dpp. Mutations that completely abolish Saxophone activity causes phenotype that are similar to partial or complete loss of activity of the dpp ligand. The saxophone products are also have serine threonine kinase activity responsible for phsophorylation and activation of the ligands including pMAD, Screw (Scw), and short gastrulation protein (Sog).</p> <p>At least 4 different Tkv variants are cloned so far (Tkv A, Tkv B, Tkv C and Tkv D).</p>
<b>Uniprot ID:</b>	<a href="#">Q9VMT1</a>
<b>NCBI:</b>	<a href="#">NP_787990</a>
<b>GeneID:</b>	<a href="#">33753</a>
<b>Format:</b>	<b>State:</b> Liquid synthetic peptide
<b>Description:</b>	Antigenic blocking peptide for AP10339PU-N
<b>Storage:</b>	Store (in aliquots) at -20 °C. Avoid repeated freezing and thawing. Shelf life: one year from despatch.
<b>General Readings:</b>	1. Singer MA, Penton A, Twombly V, Hoffmann FM, Gelbart WM. Signaling through both type I DPP receptors is required for anterior-posterior patterning of the entire <i>Drosophila</i> wing. Development. 1997 Jan;124(1):79-89. PubMed PMID: 9006069.

2. Xie T, Spradling AC. decapentaplegic is essential for the maintenance and division of germline stem cells in the Drosophila ovary. Cell. 1998 Jul 24;94(2):251-60. PubMed PMID: 9695953.
3. Shimmi O, Umulis D, Othmer H, O'Connor MB. Facilitated transport of a Dpp/Scw heterodimer by Sog/Tsg leads to robust patterning of the Drosophila blastoderm embryo. Cell. 2005 Mar 25;120(6):873-86. PubMed PMID: 15797386.