

Product datasheet for **TR515527**

Appl2 Mouse shRNA Plasmid (Locus ID 216190)

Product data:

Product Type:	shRNA Plasmids
Product Name:	Appl2 Mouse shRNA Plasmid (Locus ID 216190)
Locus ID:	216190
Synonyms:	Dip3b
Vector:	pRS (TR20003)
E. coli Selection:	Ampicillin
Mammalian Cell Selection:	Puromycin
Format:	Retroviral plasmids
Components:	Appl2 - Mouse, 4 unique 29mer shRNA constructs in retroviral untagged vector(Gene ID = 216190). 5µg purified plasmid DNA per construct 29-mer scrambled shRNA cassette in pRS Vector, TR30012, included for free.
RefSeq:	BC048906 , NM_145220 , NM_145220.1 , NM_145220.2 , BC002232
UniProt ID:	Q8K3G9



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Summary:

Multifunctional adapter protein that binds to various membrane receptors, nuclear factors and signaling proteins to regulate many processes, such as cell proliferation, immune response, endosomal trafficking and cell metabolism (PubMed:25568335, PubMed:27219021, PubMed:25328665, PubMed:19661063, PubMed:29467283). Regulates signaling pathway leading to cell proliferation through interaction with RAB5A and subunits of the NuRD/MeCP1 complex (By similarity). Plays a role in immune response by modulating phagocytosis, inflammatory and innate immune responses (PubMed:25568335, PubMed:27219021, PubMed:25328665). In macrophages, enhances Fc-gamma receptor-mediated phagocytosis through interaction with RAB31 leading to activation of PI3K/Akt signaling (PubMed:25568335). In response to LPS, modulates inflammatory responses by playing a key role on the regulation of TLR4 signaling and in the nuclear translocation of RELA/NF-kappa-B p65 and the secretion of pro- and anti-inflammatory cytokines (PubMed:27219021). Also functions as a negative regulator of innate immune response via inhibition of AKT1 signaling pathway by forming a complex with APPL1 and PIK3R1 (PubMed:25328665). Plays a role in endosomal trafficking of TGFBR1 from the endosomes to the nucleus (By similarity). plays a role in cell metabolism by regulating adiponectin and insulin signaling pathways and adaptive thermogenesis (PubMed:19661063, PubMed:29467283) (By similarity). In muscle, negatively regulates adiponectin-stimulated glucose uptake and fatty acid oxidation by inhibiting adiponectin signaling pathway through APPL1 sequestration thereby antagonizing APPL1 action (PubMed:19661063). In muscles, negatively regulates insulin-induced plasma membrane recruitment of GLUT4 and glucose uptake through interaction with TBC1D1 (By similarity). Plays a role in cold and diet-induced adaptive thermogenesis by activating ventromedial hypothalamus (VMH) neurons through AMPK inhibition which enhances sympathetic outflow to subcutaneous white adipose tissue (sWAT), sWAT being and cold tolerance (PubMed:29467283). Also plays a role in other signaling pathways namely Wnt/beta-catenin, HGF and glucocorticoid receptor signaling (PubMed:28965332, PubMed:29675572, PubMed:26445298). Positive regulator of beta-catenin/TCF-dependent transcription through direct interaction with RUVBL2/reptin resulting in the relief of RUVBL2-mediated repression of beta-catenin/TCF target genes by modulating the interactions within the beta-catenin-reptin-HDAC complex (By similarity). May affect adult neurogenesis in hippocampus and olfactory system via regulating the sensitivity of glucocorticoid receptor (PubMed:28965332, PubMed:29675572). Required for fibroblast migration through HGF cell signaling (PubMed:26445298).[UniProtKB/Swiss-Prot Function]

shRNA Design:

These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact techsupport@origene.com. If you need a special design or shRNA sequence, please utilize our [custom shRNA service](#).

**Performance
Guaranteed:**

OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.

For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at techsupport@origene.com. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).