

## Technical Data Sheet

## Caveolin Sampler Kit

## Product Information

<b>Material Number:</b>	<b>611766</b>
<b>Size:</b>	10 µg
<b>Concentration:</b>	250 µg/ml
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

## Description

Identified as a tyrosine phosphorylated protein in Rous sarcoma virus-transformed chick embryo fibroblasts (CEF), caveolin is now known to be ubiquitously expressed. Caveolin (also known as VIP21) localizes to non-clathrin membrane invaginations (caveolae) on the inner surface of the plasma membrane. This transmembrane protein plays a structural role in these specializations. Caveolin is also present at the trans-Golgi network (TGN) and similar quantities are found in apically and basolaterally destined transport vesicles. Caveolin-1 is present in two forms,  $\alpha$  and  $\beta$ , due to alternate splicing of the mRNA. The  $\alpha$  isoform has been reported to be observed at 24 kD and the  $\beta$  isoform at 21 kD. During caveolae formation, caveolin-1 forms large lipid-binding homo-oligomers. In addition, phosphorylation of caveolin at Tyr-14, Ser-88, and other residues in v-src transformed cells leads to flattening, aggregation, and fusion of caveolae and caveolae-derived vesicles. Caveolin-1 may also function as a scaffolding protein, which organizes signaling molecules. This functional role is supported by the fact that caveolin-1 interacts directly with inactive ras and G-protein  $\alpha$  subunits. Although caveolin 2 is similar to caveolin 1 in distribution and tissue expression, caveolin 2 is most abundant in adipose tissue and its expression is up-regulated upon differentiation. Caveolin 3 has been identified as a distinct isoform which is expressed only in smooth, skeletal, and cardiac muscle. Flotillin-1 was also isolated from the Triton X-100 insoluble buoyant fraction that includes caveolae. Although the mRNA expression of both flotillin-1 and Caveolin is very similar, caveolin is undetectable in brain, while flotillin-1 is very abundant. Flotillin-1 is a close homolog of the Epidermal Surface Antigen (ESA/flotillin-2), which also colocalizes in the caveolae. Thus, flotillin-1 and its relative ESA/flotillin-2 are also incorporated into the expanding list of proteins co-localized with caveolae, which includes PKC $\alpha$ , Ras, Rap Src-like kinases, G $\alpha\beta\gamma$ , GPI-linked receptors and Nitric Oxide Synthases.

Antibody	Cat#(50µg)	Isotype	MW	WB	IP	IF	IH	Human	Dog	Rat	Mouse	Chick	Control	Dilution
Caveolin 1	610406	IgG1	21-24	+	nat/den	+	+	+	+	+	+	+	Human Endothelial	1:1000
Caveolin 1 (pY14)	611338	IgG1	21-24	+		+	+	+		+	+		A431+EGF	1:1000
Caveolin 2	610684	IgG1	20	+	-	+	-	-		+	+		RSV-3T3	1:250
Caveolin 3	610420	IgG1	18	+	-	-	+	+		+	+		Rat Muscle	1:5000
Flotillin-1	610820	IgG1	48	+	-	+	-	-		+	+	+	Rat Cerebrum	1:250
Flotillin-2/ESA	610383	IgG1	42	+	nat/den	+	-	-	+	+	+	+	Human Endothelial	1:5000
GPI-Phospholipase D	610810	IgG1	110	+	-	+	-	-					Plasma	1:250
eNOS/NOS Type III	610296	IgG1	140	+	nat/den	+	+	+		+	+		Human Endothelial	1:2500
nNOS/NOS Type I	610308	IgG2a	155	+	-	+	+	+	+	+	+		Rat Pituitary	1:2500

IP: nat = native condition, den = denaturing conditions

This kit includes 10 µg of each antibody listed at a concentration of 250 µg/ml. No substitutions allowed.

## Preparation and Storage

Store undiluted at -20° C.

## Application Notes

## Application

Western blot	Routinely Tested
Immunoprecipitation	Tested During Development
Immunofluorescence	Tested During Development
Immunohistochemistry	Tested During Development

## Recommended Assay Procedure:

**Western blot:** Please refer to [http://www.bdbiosciences.com/pharmingen/protocols/Western\\_Blotting.shtml](http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml)

## BD Biosciences

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## Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.