

**MULTISCREEN™ STABLE CELL LINE  
HUMAN RECOMBINANT V1A RECEPTOR**

**PRODUCT INFORMATION**

**Catalog Number:** C1042-1

**Lot Number:** C1042-1-04202012

**Quantity:** 1 vial ( $2 \times 10^6$ ) frozen cells

**Freeze Medium:** Sigma Freezing Medium (C-6164)

**Host cell:** CHO-K1

**Transfection:** Expression vector containing full-length human V1A cDNA (GenBank Accession Number NM\_000706.3) with FLAG tag sequence at N-terminus

**Recommended Storage:** Liquid nitrogen upon receiving

**Propagation Medium:** DMEM/F12, 10% FBS, 10  $\mu$ g/mL puromycin

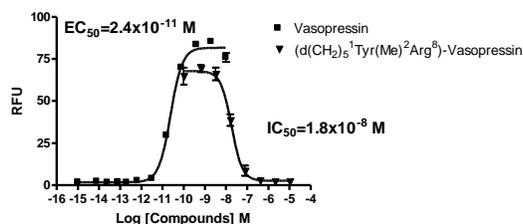
**Stability:** In progress

**Data sheet**

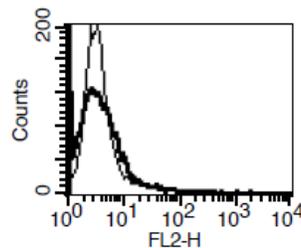
**Background:** V1A, a G protein coupled receptor, also called arginine vasopressin 1A (AVPR1A), is a receptor for neurohypophysial peptide [Arg<sup>8</sup>]-vasopressin. V1A has shown to be highly expressed in the posterior pituitary gland, where it plays an essential role in controlling the water content of the body by acting on the kidney to increase water and sodium absorption. It is also abundant in the periphery in vascular smooth muscle, myometrium and the bladder, where it also acts to mediate contraction. Other functions include glycogen breakdown in the liver, inducing platelet activation, and triggering the release of corticotrophin from the anterior pituitary gland. Vasopressin is used clinically to treat diabetes insipidus. V1a receptor signals through phosphatidylinositol hydrolysis to mobilize intracellular Ca<sup>2+</sup>. Studies have shown V1A receptor antagonists to selectively block aggressive behavior in hamsters. Repeat variations in V1A has also been associated with the risk of autism, level of musical cognition, and level of altruism.

**Application:** Functional assays

**Figure 1**



**Figure 2**



**Figure 1.** Dose-dependent stimulation of calcium flux upon treatment with ligand and inhibition of calcium flux upon treatment with antagonist, measured with Multiscreen™ Calcium 1.0 No Wash Assay Kit (Multispan MSCA01). **Figure 2.** Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

**References:**

- Ferris CF, Lu SF, Messenger T, Guillon CD, Heindel N, Miller M, Koppel G, Robert Bruns F, Simon NG (2006). "Orally active vasopressin V1a receptor antagonist, SRX251, selectively blocks aggressive behavior". *Pharmacology, Biochemistry, and Behavior* 83(2):169-74.
- Israel S, Lerer E, Shalev I, Uzefovsky F, Reibold M, Bachner-Melman R, Granot R, Bornstein G, Knafo A, Yirmiya N, Ebstein RP (2008). "Molecular genetic studies of the arginine vasopressin 1a receptor (AVPR1a) and the oxytocin receptor (OXTR) in human behavior: from autism to altruism with some notes in between". *Progress in brain research* 170:435-49.

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