

**MULTISCREEN™ STABLE CELL LINE  
RAT RECOMBINANT GPR40 RECEPTOR**

**Data sheet**

**PRODUCT INFORMATION**

**Catalog Number:** Cr1101

**Lot Number:** Cr1101-091212

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

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

**Host cell:** HEK293T

**Transfection:** Expression vector containing full-length rat GPR40 cDNA (GenBank Accession Number NM\_153304) with FLAG tag sequence at N-terminus

**Recommended Storage:** Liquid nitrogen upon receiving

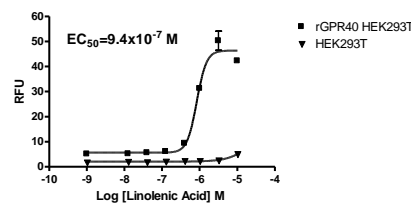
**Propagation Medium:** DMEM, 10% FBS, 1  $\mu$ g/mL puromycin

**Stability:** Stability Testing In Progress

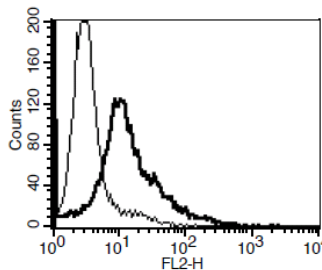
**Background:** G-protein coupled receptor 40 (GPR40 or FFA1) is specifically expressed in brain and pancreas. In pancreas, abundant GPR40 is localized to insulin-producing beta cells. Long-chain FFAs amplify glucose-stimulated insulin secretion from pancreatic beta cells by activating GPR40, indicating that GPR40 agonists and/or antagonists have potential for the development of new anti-diabetic drugs. GPR40 overexpression in breast cancer cells amplified oleate-induced proliferation, whereas silencing the GPR40 gene decreased it. These results suggest that GPR40 is implicated in the control of breast cancer cell growth by fatty acids and that GPR40 may provide a link between fat and cancer.

**Application:** Functional assays

**Figure 1**



**Figure 2**



**Figure 1.** Dose-dependent stimulation of calcium flux upon treatment with ligand, monitored with FlexStation. **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:**

Briscoe CP *et al.* (2003) The orphan G protein-coupled receptor GPR40 is activated by medium and long chain fatty acids. *J Biol Chem* 278:11303-11311.

Steneberg P *et al.* (2005) The FFA receptor GPR40 links hyperinsulinemia, hepatic steatosis, and impaired glucose homeostasis in mouse. *Cell Metab* 1:245-258.

Hardy S *et al.* (2005) Oleate promotes the proliferation of breast cancer cells via the G protein-coupled receptor GPR40. *J Biol Chem* 280:13285-13291.

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