

# Product Information

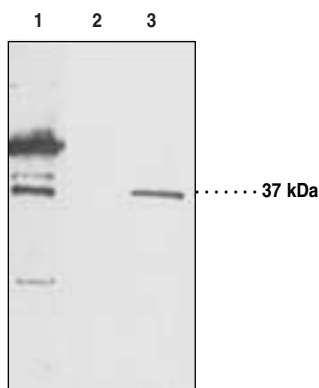


## GPR55 Polyclonal Antibody

Item No. 10224 • Lot No. XXXX

- Contents:** This vial contains (100-500 µg of peptide affinity-purified IgG, *lot specific*) in 500 µl TBS, pH 7.4, containing 50% glycerol, 0.5 mg/ml BSA, and 0.02% sodium azide. This is sufficient antibody for at least 10 western blots.
- Synonym:** G Protein-Coupled Receptor 55
- Antigen:** Human GPR55 amino acids 207-219 (ILLGRRDHTQDWV)  
Antigen alignment with other known species as follows:  
Bovine I L v a R R D H T r D W V  
Human I L L G R R D H T Q D W V  
Mouse I L L \_ R R p D s T e D W V  
Rat I L L s i q g D \_ \_ \_ D q W V
- Host:** Rabbit
- Cross Reactivity:** (+) Bovine, human, and mouse (Neuro-2a cells) GPR55; other species not tested.
- Stability:** ≥1 year at -20°C
- Applications:** Flow cytometry, immunocytochemistry, and western blot. The recommended starting concentration for flow cytometry is 10 µg/ml, 10-20 µg/ml for immunocytochemistry, and 5 µg/ml for western blot. Other applications were not attempted and therefore optimal working dilutions should be determined empirically.
- Concentration:** Varies by lot, from 0.2-1.0 mg/ml (100-500 µg/vial). Always 100 µl final working volume for western blotting.

GPR55 is a G protein-coupled receptor that has been identified as a novel cannabinoid receptor, although its exact role is still controversial.<sup>1,2</sup> Previously central cannabinoid (CB<sub>1</sub>) and peripheral cannabinoid (CB<sub>2</sub>), two widely characterized receptors have been shown to bind THC the active component of cannabis and other endocannabinoids. Mounting evidence suggests that additional receptors play a role in cannabinoid-related signal transduction and GPR55 has been identified as one of them.<sup>3</sup> This receptor is widely expressed in the brain, specifically found in large dorsal root ganglion neurons.<sup>4</sup> Along with binding THC, it also shows high affinity to anandamide, methanandamide, JWH015, and many other cannabinoid ligands.<sup>5,6</sup> The human protein shows 75% and 78% overall sequence homology with the rat and mouse proteins, respectively.<sup>1</sup> GPR55 is composed of 319 amino acids and has an expected molecular weight of 37 kDa. Post-translational modifications such as glycosylation may retard receptor electrophoretic migration and thereby protein signal may be detected above 37 kDa.



Lane 1: Bovine cornea (5 µg)  
Lane 2: HEK293 lysate (13 µg)  
Lane 3: GPR55-transfected HEK293 lysate (13 µg)

### Laboratory Procedures

#### Immunofluorescent staining of cultured cells

1. Prepare cell samples according to your standard protocols.
2. Wash briefly with PBS, pH 7.4, to remove excess serum (if cell culture).
3. Fix the cells with 3.5% formaldehyde in PBS, pH 7.4, for 10 minutes.
4. Wash the cells with PBS containing 2% BSA two times, 10 minutes each.
5. Incubate the cells with the antibody (recommended starting concentration of 10 µg/ml; the optimal working condition should be determined by titration) for 20-60 minutes at room temperature.
6. Wash the cells with PBS/BSA buffer three times and then incubate with a secondary antibody at a dilution suggested by the manufacturer.
7. Wash the cells three times more and examine the staining by flow cytometry or by fluorescent microscopy with an appropriate filter. Store the plate at 4°C in the dark for later analysis if desired.

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

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Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

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## References

1. Ryberg, E., Larsson, N., Sjögren, S., *et al.* The orphan receptor GPR55 is a novel cannabinoid receptor. *Br. J. Pharmacol.* **152**, 1092-1101 (2007).
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4. Lauckner, J.E., Jensen, J.B., Chen, H.-Y., *et al.* GPR55 is a cannabinoid receptor that increases intracellular calcium and inhibits M current. *Proc. Natl. Acad. Sci. USA* **105(7)**, 2699-2704 (2008).
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