

GPR83: A Novel Treg Expressed Cell Surface Marker

GPR83 is a member of the Orphan-A G-Protein coupled receptor family, and has an unknown ligand. It has been previously reported in various regions of the brain, within a subset of T-lymphocytes, and by RT-PCR at low levels in heart, kidney, liver, and other organs.

As research continues to unravel the molecular basis of regulatory T cells (Treg), FOXP3 has emerged as a key player in orchestrating development and function of natural Treg. Two recent publications identified GPR83 as specifically upregulated in fresh and activated CD4⁺ CD25⁺ Treg cells. Both groups performed gene expression profiling on Treg, and other T cells to identify differentially regulated genes. Sugimoto et al. performed additional mRNA and protein expression analysis based on the results of their micro array analysis using RT-PCR as well as FACS analysis of GPR83 using anti-GPR83 antibody. These recent findings suggest that GPR83 may be useful as a specific and stable cell surface marker with modulatory properties, and a key molecule for further characterizing the molecular basis of Tregs. IMGENEX proudly offers this Flow and IHC positive GPR83 antibody (IMG-71561), as well as other GPR83, FOXP3, and CD marker antibodies for your Treg research.

Key Publication Findings

- GPR83 is upregulated in both murine and human Treg • Gene analysis, mRNA, and protein expression show that GPR83 is upregulated in FOXP3⁺ cells
- GPR83 is expressed in both fresh and activated Treg
- GPR83 appears to be FOXP3 dependent, although Hansen et al. suggests that induction of FOXP3⁺ Treg by GPR83 occurs in vivo, suggesting a more complex relationship
- GPR83 is found in both Thymus and Spleen/LN CD4 and CD25 cells
- Foxp3 retroviral transduced CD25⁻ CD4⁺ cells induces GPR83 expression at much higher levels than mock-transduced cells
- Suggests a possible ligand that binds to GPR83 in vivo which confers to these cells suppressive activity.

About the Author

IMGENEX India Pvt Ltd. the only biotech company in Orissa and one of its kinds in Eastern India. IMGENEX India started in Oct as an outsourcing branch of [IMGENEX Corporation](#), San Diego, USA. Find out more information about [GPR83 & FOXP3 Treg](#).

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