Brain-specific angiogenesis inhibitor 3

- Structure of the complex of C1q-like 3 protein with adhesion-GPCR BAI3
- Formation of chronic morphine withdrawal memories requires C1QL3-mediated regulation of PSD95 in the mouse basolateral amygdala
- Brain-Specific Angiogenesis Inhibitor 3 Is Expressed in the Cochlea and Is Necessary for Hearing Function in Mice
- Mapping and targeting of C1ql1-expressing cells in the mouse
- Generation and initial characterization of mice lacking full-length BAI3 (ADGRB3) expression
- The protective effects of Esculentoside A through AMPK in the triple transgenic mouse model of Alzheimer's disease
- Identification of hub genes in colorectal cancer based on weighted gene co-expression network analysis and clinical data from The Cancer Genome Atlas
- Integrated Analysis of Genomic and Immunological Features in Lung Adenocarcinoma With Micropapillary Component

see also Brain-specific angiogenesis inhibitor 1

Brain angiogenesis inhibitor 3 (ADGRB3/BAI3) belongs to the family of Adhesion G protein-coupled receptors. It is most highly expressed in the brain where it plays a role in synaptic function. Genome-wide association studies have implicated ADGRB3 in disorders such as schizophrenia and epilepsy. Somatic mutations in ADGRB3 have also been identified in cancer. To better understand the in vivo physiological role of ADGRB3, Shiu et al. used CRISPR/Cas9 editing to generate a mouse line with a 7-base pair deletion in Adgrb3 exon 10. Western blot analysis confirmed that homozygous mutants (Adgrb3Δ7/Δ7) lack full-length ADGRB3 expression. The mutant mice were viable and reproduced in Mendelian ratios but demonstrated reduced brain and body weights and deficits in social interaction. Measurements of locomotor function, olfaction, anxiety levels, and prepulse inhibition were comparable between heterozygous, homozygous mutants, and wild-type littermates. Since ADGRB3 is also expressed in organs such as the lungs and pancreas, this new mouse model will also facilitate the elucidation of ADGRB3's role in non-central nervous system-related functions. Finally, since somatic mutations in ADGRB3 were identified in patients with several cancer types, these mice can be used to determine whether loss of ADGRB3 function contributes to tumor development [1)].

1)
Shiu FH, Wong JC, Bhattacharya D, Kuranaga Y, Parag RR, Alsharif HA, Bhatnagar S, Van Meir EG, Escayg A. Generation and initial characterization of mice lacking full length BAI3 (ADGRB3) expression. Basic Clin Pharmacol Toxicol. 2023 Jun 20. doi: 10.1111/bcpt.13917. Epub ahead of print. PMID: 37337931.