

Advances in next generation GPCR drug development

Dimerix Bioscience is using its G-protein coupled receptor-heterodimer identification technology (GPCR-HIT) to develop the next generation of drugs targeting G-protein coupled receptors (GPCRs). It is systematically screening GPCRs relevant to the cardiac, central nervous and respiratory systems to identify receptors that form heterodimers. This information enables Dimerix to identify innovative combination drug therapies and conduct high throughput screening programs against the novel heterodimer targets.

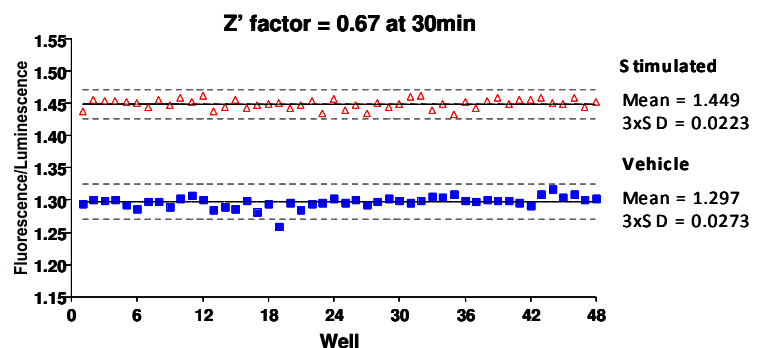
Dimerix is a privately-held Australian biotechnology company developing new GPCR-related intellectual property through its in-house research programs and external collaborations.

GPCR-HIT Demonstrations

Reproducibility for High-throughput Screening

Z' factors of 0.67 for intra-plate reproducibility demonstrate the robustness the GPCR-HIT assay for high-throughput screening.

Further, Z' factors of greater than 0.6 are maintained for a period of approximately 5 to 60 minutes following addition of the ligand providing significant flexibility for data collection.



Novel heterodimers including cardiovascular GPCR heterodimers

Dimerix has completed a preliminary screen using GPCR-HIT that definitively identified 14 new heterodimers from more than 80 combinations tested.

Results from the screen include confirmation of the interaction of a previously reported angiotensin heterodimer, and the identification of a second unreported heterodimer involving AT1AR.

Additional receptor screening is ongoing.

Applications

Novel heterodimer pairs are being identified and combination therapies are being elucidated around approved GPCR drugs. The successful optimisation of GPCR-HIT for high throughput screening now enables Dimerix to develop in-house and collaborative HTS programs to identify novel compounds specifically targeting GPCR heterodimers.

Key areas of application for GPCR-HIT include:

- **Market Expansion:** Transactivation of alternate receptors enabling identification of new combination therapies and indications for approved compounds.
- **Product Life Extension:** Explain side effects of existing GPCR drugs leading to improved safety profiles and new patents.
- **Receptor De-orphanisation:** Identification of GPCR partners for orphan receptors.
- **New GPCR Targets:** GPCR heterodimers will become the next generation targets for high throughput screening programs.