

**Who would like to build planes in the air?
The Alliance for Cellular Signaling and the array of DNA microarrays
as a part of it.**

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In order to completely understand the relationships between sets of inputs and outputs in signaling cells in a context-dependent manner that vary both temporally and spatially, sets of detail analysis must be conducted. This will involve tremendous efforts in the identification of many proteins that comprise the various systems, the assessment of time-dependent information flow through the systems, and the reduction of the masses of detailed data into a set of interacting theoretical models. Who would be so brave to challenge such massive construction especially in front of a big group of intelligent audience? The Alliance for Cellular Signaling (<http://afcs.org>) is doing just that, constructing a cell signaling interaction model and making their progress publicly available. The Alliance for Cellular Signaling project is like the construction of an airliner at 30,000 feet while withholding caution that the world is watching and any wrong move will be shamefully remembered. Who would like to build airplanes in the air?

Caltech DNA/protein microarray lab has developed its own DNA microarray protocol using several different platforms. Currently we have inkjet printed RIKEN 16K cDNA arrays, inkjet printed Operon and Compugen 16K oligonucleotide arrays, pin-spotted NIA 16K cDNA arrays, Affymetrix GeneChip system, and others. We have performed direct labeling, indirect labeling, and amplification methods. Based on our diverse experiences, we have successfully challenged several of our own research projects and several collaboration projects. One of our main researches is centered on ligand screening of B cells in mouse models as a part of Alliance for Cellular Signaling. The transcription analysis of single or double ligand screen in the B-lymphocyte and cardiac myocyte is currently ongoing. The following ligands were already assessed; anti-IgM, BLC, CD40L, IL10, IL4, SDF1, Terbutaline, Bombesin, IFN γ , IGF-1, TNF α , LTB $_4$, NGF, SLC, PGE, fMLP, ELC, S1P, NEB, LPA, BAFF, Dimaprit, LPS, CpG, 2-MT, LPS, CGS, IFB, and PAF. About 20 more ligands are being screened. Some of our microarray data can be found in Caltech microarray lab web site.