Abnova

Membrane Protein Proteoliposomes
CD Molecule and GPCR

Do you have a need for membrane proteins? We will use our robust *in vitro* wheat germ expression system combined with proprietary liposome technology to produce your membrane protein of interest. Abnova has garnered a large collection of catalogue membrane proteins covering CD molecule and GPCR to facilitate drug discovery and validation research.

in vitro Wheat Germ System + Liposome Technology

Abnova *in vitro* protein expression system is based on the eukaryotic translational apparatus of wheat germ. Wheat embryos store all of the components of translation in a concentrated dried state, ready for protein synthesis as soon as germination starts. Conventional Wheat germ extracts contain the RNA N-glycosidase tritin and other inhibitors of translation such as thionin, ribonucleases, deoxyribonucleases, and proteases. These inhibitors originate from the endosperm. Extensive washing of the wheat embryos to eliminate endosperm contaminants has resulted in extracts with a high degree of stability and activity.

By using a mRNA having 5'cap and a poly(A)-tail with this extract in combination with a proprietary liposome, the translation reaction *in vitro* yields ample quantity of membrane protein which is captured by the liposome leading to correct conformation and folding essential for biological function. This system has significant advantages over commonly used protein expression platforms such as E. coli, insect cell, and mammalian cell which are all *in vivo* systems and under the constraint of cell membrane leading to low yield and stability. Moreover, the *in vitro* wheat germ system is amenable to automation for high throughput small molecule and biological screening and characterization.

Advantages

- Higher Yield
- Greater Stability
- High Expression Success Rate
- Native Protein Conformation
- Amenable to Automation

Membrane Protein Categories

- Clustered Differentiation (CD) Molecules
- G Protein Coupled Receptors (GPCR)

Demonstrations

CYBB protein 15ul/Lane
GPR84 protein 15ul/Lane
CXCR4 protein 15ul/Lane

Membrane Protein Production

Plasmid DNA

SP6 Promoter | Translation Enhancer | Gene ORF

in vitro Transcription

mRNA

in vitro Translation

Wheat Germ Extract

Liposome

Membrane protein

ATP GTP Cr-P Cr-K

20 different amino acids