

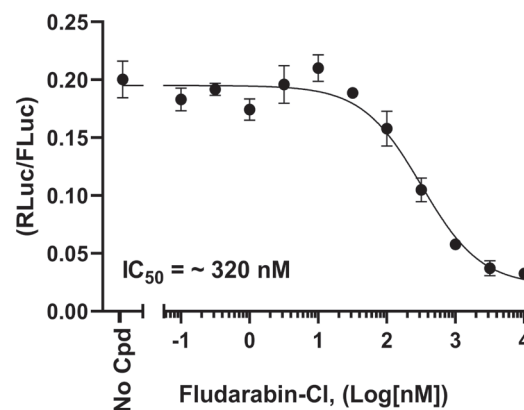
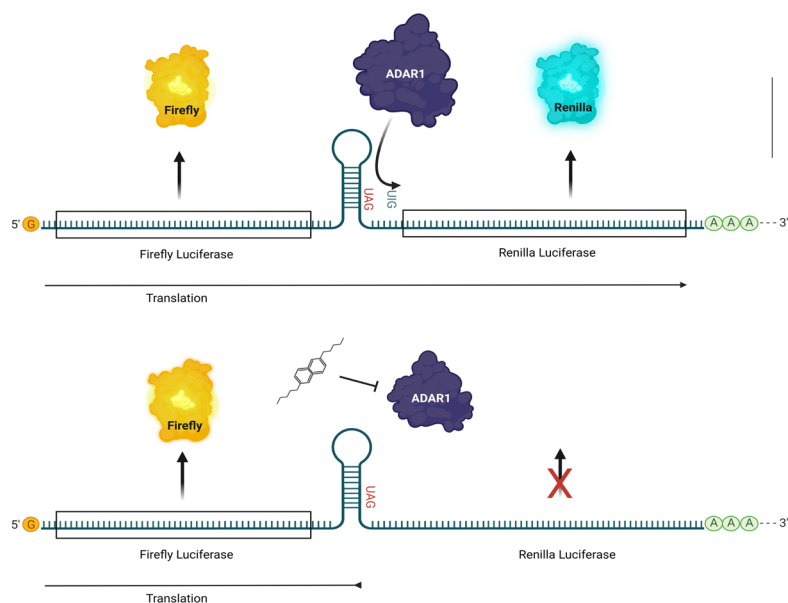
# Research on RNA Editor ADAR

The Adenosine deaminases acting on RNA (ADAR) enzymes edit adenosine to inosine (A-to-I) on double-stranded RNA molecules and play major roles in viral defense and innate immunity through regulation of the interferon response. They also regulate RNA and miRNA processing. ADAR proteins are involved in several genetic diseases, inflammation, auto-immune diseases, and cancer, and therefore are promising therapeutic targets. Learn more about ADAR1 in our Tech Note: [Role of ADAR1 in biology and disease](#).

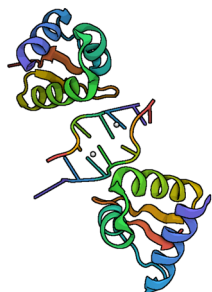
BPS Bioscience provides a unique ADAR1 dual reporter cell line designed to quantify ADAR1 activity and useful for compound screening or characterization in drug discovery and development projects.

## ADAR Reporter Cell Line

This cell line (BPS Bioscience #78547) stably expresses ADAR1 and a separate A-to-I editing reporter construct containing the firefly luciferase gene, which is constitutively expressed, upstream of a GluA2 ADAR substrate element followed by the Renilla luciferase gene. The GluA2 element contains an amber stop codon (UAG). When edited by ADAR, this stop codon will be changed to UUG, which is read as tryptophan (UGG) by the translation machinery. This edit allows translation to occur and results in the expression of Renilla luciferase. Conversely, in the absence of ADAR1 activity, translation terminates at the stop codon and Renilla is not expressed.



Dose response of Fludarabine-Cl in ADAR1 Luciferase Reporter HEK293 cells. The cells were treated with increasing doses of Fludarabine-Cl for 30 hours and both Firefly and Renilla luciferase activity were measured using the Dual Luciferase (Firefly-Renilla) Assay System (BPS Bioscience 60683). Results are shown as the Renilla/Firefly luciferase ratio.



## Purified Proteins

ADAR1 and ADAR2, full length, containing an N-terminal FLAG-tag (BPS Bioscience #100472 and #101164). Illustration: Crystal structure of the Za domain of ADAR1 bound to Z-RNA (PDB 2gxb)

Illustrations created with BioRender.com