pHyg-PCUP1-AID*(N) Plasmid

Catalogue number: 153559
Sub-type: pMK38, pRS306 derivative
Images:

Contributor

Inventor:
Institute: Cancer Research UK London Research Institute: Lincoln's Inn Fields
Images:

Tool details

***FOR RESEARCH USE ONLY**

Name: pHyg-PCUP1-AID*(N) Plasmid

Alternate name:

Class:
Conjugate:
Description: One of a series of plasmids developed by Morawska and Ulrich to enhance the versatility of the auxin-inducible degron (AID) system in *Saccharomyces cerevisiae*. This system uses a plant hormone induced degradation signal, known as a degron, to control protein levels in vivo. The gene of interest is fused to part of an auxin (indole-3-acetic acid (IAA)) regulated protein (IAA17) domain, known as an AID tag. In the presence of the auxin the degron domain of IAA17 in the fusion protein interacts with the substrate recognition domain of an F-box protein, TIR1. This leads to ubiquitylation of the fusion protein by recruitment of an SCF-type ubiquitin ligase (E3) and finally proteasomal degration. Degradation is reversible and quick, measured in minutes rather than hours. Due to the lack of an auxin-responsive system in animals or yeast, the hormone as well as the F-box protein are otherwise biologically silent and cause no measurable physiological changes in the absence of a target.Morawska and Ulrich investigated variations in the size of the AID tag to reduce its impact on the fused protein of interest and developed an expanded set of expression vectors including the AID tag with different combinations of selection markers (conferring resistance against hygromycin, geneticin, nourseothricin or histidine prototrophy) and different epitope tags (8myc, 9myc, 6FLAG, 6HA or GFP). Please note the plant F-box protein TIR1 is expressed from a separate plasmid; therefore the plasmid carrying the AID-tagged fusion protein and the TIR1 expression vector are co-transfected into cells for the system to operate. The IAA17 and TIR1 genes are from the plant species *Arabidopsis thaliana* Refer to Table 1 in Morawska and Ulrich 2013 for a summary of the AID-tagging plasmid versions - which vary according to IAA17 size, AID-tag C- or N- terminal position relative to protein of interest, epitope tag, selection marker and parent vector.
Purpose:
Parental cell:

Organism:
Tissue:
Model:
Gender:
Isotype:
Reactivity:
Selectivity:
Host:
Immunogen:
Immunogen UNIPROT ID:
Sequence:
Growth properties:
Production details:
Formulation:
Recommended controls:
Bacterial resistance:
Selectable markers: Hygromycin
Additional notes: One of a series of plasmids developed by Morawska and Ulrich to enhance the versatility of the auxin-inducible degron (AID) system in *Saccharomyces cerevisiae*. This system uses a plant hormone induced degradation signal, known as a degron, to control protein levels in vivo. The gene of interest is fused to part of an auxin (indole-3-acetic acid (IAA)) regulated protein (IAA17) domain, known as an AID tag. In the presence of the auxin the degron domain of IAA17 in the fusion protein interacts with the substrate recognition domain of an F-box protein, TIR1. This leads to ubiquitylation of the fusion protein by recruitment of an SCF-type ubiquitin ligase (E3) and finally proteasomal degration. Degradation is reversible and quick, measured in minutes rather than hours. Due to the lack of an auxin-responsive system in animals or yeast, the hormone as well as the F-box protein are otherwise biologically silent and cause no measurable physiological changes in the absence of a target.Morawska and Ulrich investigated variations in the size of the AID tag to reduce its impact on the fused protein of interest and developed an expanded set of expression vectors including the AID tag with different combinations of selection markers (conferring resistance against hygromycin, geneticin, nourseothricin or histidine prototrophy) and different epitope tags (8myc, 9myc, 6FLAG, 6HA or GFP). Please note the plant F-box protein TIR1 is expressed from a separate plasmid; therefore the plasmid carrying the AID-tagged fusion protein and the TIR1 expression vector are co-transfected into cells for the system to operate. The IAA17 and TIR1 genes are from the plant species *Arabidopsis thaliana*Refer to Table 1 in Morawska and Ulrich 2013 for a summary of the AID-tagging plasmid versions - which vary according to IAA17 size, AID-tag C- or N- terminal position relative to protein of interest, epitope tag, selection marker and parent vector.

Target details

Target: Auxin-inducible degron (AID) system; indole-3-acetic acid 17 (IAA17)

Target alternate names:

Target background:

Molecular weight:

Ic50:

Applications

Application:
Application notes:

Handling

Format:
Concentration:
Passage number:
Growth medium:
Temperature:
Atmosphere:
Volume:
Storage medium:
Storage buffer:
Storage conditions:
Shipping conditions:

Related tools

Related tools: YIp204-PADH1-atTIR1-9myc Plasmid ; pHyg-AID(1-114) Plasmid ; pHyg-AID* Plasmid ; pHyg-AID(31-114) Plasmid

References

References: Morawska et al. 2013. Yeast. 30(9):341-51. PMID: 23836714. ; An expanded tool kit for the auxin-inducible degron system in budding yeast.