

Novel mode of action or site of action herbicide for grass-weeds

Background

The majority of the most troublesome grass weeds have developed resistance to one, or more, of the most effective herbicides used for their control. The key weed species Alopecurus, Avena, Setaria, Echinochloa, Phalaris or Lolium have developed resistance to one or more herbicides from groups 1, 2, 3, 5, 9, 14 and 15 severely limiting grower options for controlling these weeds. There is an urgent need for a herbicide with a novel mode of action for control of grass weeds.

What we're looking for

We are looking for a herbicide with a previously unknown mode of action OR novel site of action to control grass weeds such as Alopecurus, Avena, Setaria, Echinochloa, Phalaris or Lolium in cereal crops including winter wheat, spring wheat, durum wheat, rice and possibly corn. Potential partnerships include licensing or joint development.

Solutions of interest include:

- Novel mode of action to control Alopecurus, Avena, Setaria, Echinochloa, Phalaris, Lolium not currently registered with the Herbicide Resistance Action Committee (HRAC)
- Novel site of action for control of Alopecurus, Avena, Setaria, Echinochloa, Phalaris, Lolium

Our must-have requirements are:

- The eventual solution should be compatible with single application (herbicide should be effective after just one use per growing season)
- Active on one or more annual grass weeds including Avena fatua, Alopecurus myosuroides, Echinochloa, Phalaris minor, Setaria viridis, Lolium rigidum

Our nice-to-have requirements are:

- Post-emergence application timing (solutions that can be applied after the target weeds have emerged from the soil)
- Selectivity in one or more of the following grass crops - corn, cereals, rice
- Systemic herbicides

Acceptable technology readiness levels (TRL): Levels 3-9

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

What we can offer you

Eligible partnership models:

- Co-development
- Acquisition
- Licensing
- Material transfer
- Sponsored research

Benefits:

Sponsored Research

Funding is proposal dependent, but an accepted proposal may receive support in the range of 50,000 - 200,000 USD (milestone dependent) with the potential for follow on funding.

Expertise

Successful applicants will work with the UPL Global Lead for new Herbicide Technologies to manage the project.

Facilities and Services

Successful applicants will have access to UPLs global network of research stations and greenhouse/lab facilities to conduct research year-round.

Tools and Technologies

Available analytical capabilities include:

- Active ingredient quantitation
- In vitro/in vivo efficacy evaluation
- Targeted biomarker quantitation
- Oligonucleotide sequence verification and purity analysis
- Untargeted metabolomics of biological products and tissues
- Mode of action assays
- Chemical synthesis
- Chromatographic isolation, purification, identification of compounds of interest

Reviewers

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