Targeted delivery of agrochemicals into plan with a bio-recognition motif

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It is important to increase crop production to meet the growing global population demand and this has been done conventionally with the use of agrochemicals. Non-specific application of agrochemicals can result in both an increase in cost of food production and negative impact on the environment. It is therefore advantageous if targeted delivery of agrochemicals becomes a reality. Recent studies found that surface functionality of nanoparticles with a biorecognition motif can be an effective strategy to guide nanoparticles into plant chloroplasts. In this project, we deliver bio-recognizable molecular wrapped gold nanoparticles as nanocarriers for agrochemicals and investigate their interaction with plants. We believe that the project has the potential to provide new tools for smart delivery of agrochemicals and new ways to deliver bioactive molecules in plants. We hope that our study using the bio-recognition motif will expand the applications in plant biology and bioengineering, nanoparticle-plant interactions, and nano-agriculture.