

Why has 'Glowing Plant Project' failed to deliver on promises?

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.

The Glowing Plant Project claimed to want to create trees that would light the streets.

[2 years] later there are no glowing plants even in service as dim nightlights, let alone illuminating our cities.

The Chemistry Problem

The bioluminescence they speak of is actually quite old technology in the lab... The enzyme [*luciferase*](#)... mediates a chemical reaction in critters like fireflies....[it requires] adenosine triphosphate (ATP) and oxygen (two things a plant has available in some amount) but also requires a chemical called ***luciferin***.

...

The Glowing Plant Project would also have to have the plant manufacture massive amounts of luciferin, and then count on massive amounts of ATP and oxygen. Metabolically, this might not work so well.

Luciferase activity is down-regulated by its own products, meaning that you can't generate a lot of the intermediates without impeding the process. This is great to measure a snapshot of gene activity...but not great to light a street.

It seems like some fundamental limits of the system were not well considered when the campaign was initiated.

Read full, original post: [Unfilled Glowing Plant Promises Harm Science Perception](#)