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Chemical regulators to improve soybean transformation efficiency

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Improving the transformation efficiency is important for gene characterization and molecular breeding. *Agrobacterium tumefaciens*-mediated transformation has been widely used to many plant species. However, transformation efficiency in soybean is low compared with others such as rice and tomato. We have observed that chemical regulators including lipoic acid, sulfamethazine or polyamine can significantly improve soybean transformation efficiency. We determined optimal concentrations of these regulators using transient GUS gene expression as a molecular marker. To reduce transgenic plant chimera, we are also using somatic embryos as explants in *Agrobacterium*-mediated transformation. We believe that combinations of these approaches may be helpful for genetic transformation of soybean using *Agrobacterium*-infection.