

RNA-Mediated Control of Metal Nanoparticle Shape

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In 2005, we reported on the selection of RNA sequences that mediate the formation of hexagonal and cubic particles from aqueous solutions containing the organometallic precursor $[\text{Pd}_2(\text{DBA})_3]$ (DBA = dibenzylideneacetone). The use of aqueous solutions containing organic cosolvents is common when performing RNA in vitro selections for RNA catalysts of organic reactions.¹ The aqueous solutions used in our work may contain 1–10% THF as cosolvent. Another report claims that it is not possible to prepare aqueous/organic solutions of $[\text{Pd}_2(\text{DBA})_3]$ without observing the formation of a precipitate.² However, as shown in Figure 1, our solutions are clearly free from gross precipitates. Indeed, others have reported the preparation of aqueous solutions of $[\text{Pd}_2(\text{DBA})_3]$ using only 0.05% v/v of the cosolvent Triton X.³



Figure 1. Photograph of a 400 μM solution of $[\text{Pd}_2\text{DBA}_3]$ in a 90% H_2O /10% THF mixture.

Literature Cited

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