**Addressing catalyst-related impurities in palladium-catalyzed C-N coupling**

*Serena Fantasia*

Pharmaceutical Division, Synthetic Molecules Technical Development, Process Chemistry & Catalysis, F. Hoffmann-La Roche Ltd, 4070 Basel (Switzerland).

[serena\_maria.fantasia@roche.com](mailto:serena_maria.fantasia@roche.com)

Capitalizing on their stability and high activity, well-defined palladium(II) precatalysts progressively replaced in situ formed systems and are now the benchmark in cross-coupling chemistry.[[1]](#footnote-1) Nevertheless, upon activation generating the catalytically active species (PdII -> Pd0), potentially problematic by-products are often released. We set to address this challenge and present herein an easily synthesized dvds-based family of palladium(0) complexes bearing the omnipotent Buchwald biaryl phosphine ligands (Scheme 1). The rather unreactive, low boiling, and nontoxic divinyltretramethyldisiloxane (dvds) acts as a throw away ligand and can be easily removed from the final product, thereby eschewing further tedious purification steps.



The complexes show high catalytic activity in C-N coupling reactions, rivaling the benchmark palladium(II) precatalysts. Both aryl bromides and aryl chlorides are coupled to a variety of amines in high yields (selected examples presented in Figure 1).



1. Li, H.; Johansson Seechurn, C. C. C.; Colacot, T. J. *ACS Catal.* **2012**, *2*, 1147; Campeau, L.-C.; Hazari, N. *Organometallics* **2019**, *38*, 3. [↑](#footnote-ref-1)