**Arene Ruthenium Catalyst MCAT-53 for the Synthesis of Heterobiaryl Compounds in Water through Aromatic C–H Bond Activation**

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**Abstract**



A new water friendly MCAT-53 [Ru2Cl2 (HCOO)3(*p*-cymene)] Na (sodium η-6-*p*-cymene dichloro diruthenium triformato complex) has been developed as a catalyst to effect aromatic C–H bond activation and C–C coupling reactions in water. Cross-coupling reactions were performed in DI/distilled water under air- and ligand-free conditions without further activation of the catalyst. Synthesis of an advanced intermediate of CETP inhibitor, Anacetrapib, in water has been demonstrated to give a single regioisomer using the MCAT-53 catalyst.

**Keywords:** [**C−C coupling**](https://pubs.acs.org/action/doSearch?action=search&AllField=C%E2%88%92C+Coupling&qsSearchArea=AllField); [**C−H activation**](https://pubs.acs.org/action/doSearch?action=search&AllField=C%E2%88%92H+Activation&qsSearchArea=AllField); [**MCAT-53**](https://pubs.acs.org/action/doSearch?action=search&AllField=MCAT-53&qsSearchArea=AllField); [**ruthenium catalyst**](https://pubs.acs.org/action/doSearch?action=search&AllField=Ruthenium+Catalyst&qsSearchArea=AllField)