Resonance destabilization in *N*-acylanilines (anilides) : electronically-activated planar amides of relevance in N—C(O) cross-coupling.

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Transition-metal-catalyzed activation of amide N−C(O) bonds proceeds via selective metal insertion into the carbon−nitrogen amide bond. Herein, we demonstrate that Nacylanilines (anilides), the first class of planar amides that have been shown to undergo selective amide N−C cross-coupling reactions, feature a significantly decreased barrier to rotation around the amide N−C(O) bond. Most significantly, we demonstrate that amide nN → π*C=O resonance in simple anilides can be varied by as much as 10 kcal/mol. The data have important implications for the design of N−C(O) amide cross-coupling reactions and control of the molecular conformation of anilides by resonance effects.

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