Improving IBX, a Hypervalent Iodine Oxidant

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We suggest an improvement of the hypervalent iodine oxidation reagent 2-iodobenzoic acid (IBX) based on a newly identified rate-limiting step of the reaction. This new step, a twisting that rotates the oxo group of the reagent from an axial to an equatorial position, is necessary to generate a stable form of IBA once it is eliminated. The improvement, substitution at an ortho position of the reagent, is expected to generate a more active and selective reagent, and the closeness of the site to the substrate opens up possibilities for chiral substrate discrimination, as well as control of and access to diverse IBX reaction manifolds.