Synthesis of LY2784544

**Significance:** LY2784544 is a Janus kinase 2 (JAK2) inhibitor that is under development for the treatment of myeloproliferative neoplasms. The synthesis depicted delivered >100 kg of the target molecule and features a new aminomethylation reaction (E → G) involving N-methylmorpholine N-oxide and vanadium catalysis.

**Comment:** The authors speculate that the aminomethylation reaction of E involves a primary radical derived from N-methylmorpholine. An alternative ionic mechanism based on an iminium salt is unlikely since N-methyleneomorpholinium chloride reacts preferentially at the methyl group in E (Mannich-type reaction).