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NOVEL ASYMMETRIC SYNTHESIS OF (S)-KETAMINE ANESTHETIC DRUG USING THE CHIRAL TERT-BUTANESULFINAMIDE

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2-(2-chlorophenyl)-2-(methylamino)-cyclohexanone (Ketamine), has been widely used as an anesthetic and analgesic drug. In this research work, at first the 2-(N-piperidino methyl)-1-phenyl cyclohexyl amine starting material (1), was prepared from cyclohexanone piperidine by Mannich reaction. Then, the sulfinylimin (2) was synthesized by condensation of tert-butanefulfonamide (tBS) with aminoketone (1) in presence

of Ti(OEt)₄ in 85% yield. The new chiral center was induced in (2) using Grignard reagent as nucleophile at -78°C and 75% yield. after multi step reaction including methylation of (3) and Hoffman elimination of (4) and deprotection of (5), finally, the (S)-ketamine was synthesized under ozonolize reaction of alken (6) in good yield and enantioselectivity (95% yield and %85 ee).

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