

Technical Disclosure Commons

Defensive Publications Series

October 2022

An improved process for preparing (3R)-3-[(1,1-dimethylethoxycarbonyl)amino]-4-(2,4,5-trifluorophenyl)butanoic acid

Anonymous

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Anonymous, "An improved process for preparing
(3R)-3-[(1,1-dimethylethoxycarbonyl)amino]-4-(2,4,5-trifluorophenyl)butanoic acid", Technical Disclosure
Commons, (October 03, 2022)

https://www.tdcommons.org/dpubs_series/5416



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

An improved process for preparing (3R)-3-[(1,1-dimethylethoxycarbonyl)amino]-4-(2,4,5-trifluorophenyl)butanoic acid

This report is related to an improved process for preparing (3R)-3-[(1,1-dimethylethoxycarbonyl)amino]-4-(2,4,5-trifluorophenyl)butanoic acid.

Examples:

Example 1: Process for preparing 5-(1-hydroxy-2-(2,4,5-trifluorophenyl)ethylidene)-2,2-dimethyl-1,3-dioxane-4,6-dione (Adduct)

In a round bottomed flask taken 2,4,5-trifluorophenylacetic acid (1eq) is taken together with DMF (~4V), DMAP (0.1 eq), and Meldrum's acid (1.1 eq). Triethylamine (3 eq) was charged slowly and cooled. Charged Pivoyl chloride (~1eq) and contents were heated for few hours. After colling RM Mixture, contents were acidified using HCl. The product obtained was purified using water and dried to yield title compound.

Example 2: Process for preparing methyl (E/Z)-3-((1-phenylethyl)amino)-4-(2,4,5-trifluorophenyl)but-2-enoate (Compound 2)

The Meldrum's adduct obtained from previous step was taken in Methanol and heated. The content obtained was then reacted with (R)-1-phenylethylamine (~2eq) in presence of acetic acid. Product obtained was filtered, purified using toluene and dried to yield isomeric mixtures of title compound.

Example 3: Process for preparing methyl (R)-3-(((R)-1-phenylethyl)amino)-4-(2,4,5-trifluorophenyl)butanoate.pTSA (Compound 3)

Compound 2 (1 eq) was taken in a reactor with 1,2-dimethoxy ethane (5 V), isopropyl alcohol (0.5 V) and toluene (0.5 V) solvent mixtures and sodium borohydride (2.5 eq) was charged to a round bottomed flask, and contents were cooled to < -50 °C. Methane sulfonic acid (~4 Eq) was slowly added and stirred for few hours. After completion of reaction, RM was charged with water, followed by toluene and basified using aq. Ammonia. The solid obtained was purified using IPA and pTSA solution was added and contents were heated for few hours and cooled. The solid obtained was filtered, purified using IPA + hexane and dried.

Example 4: Process for preparing (R)-3-amino-4-(2,4,5-trifluorophenyl)butanoic acid.HCl (Compound 5)

In a reactor Compound 3 (1 eq), ethyl acetate (3V) and water (3V) and pH of the RM was adjusted between (9-10) using sodium carbonate and stirred. After few minutes, organic layer was separated and purified and dried. The contents were then taken in Methanol (2V) and Pd/C (0.01 %) and reduced the contents in a hydrogen reactor. After completion of reaction, product obtained was basified using aq.NaOH, and solvent was distilled off completely. The solid obtained was then acidified using dil HCl and dried to yield title compound.

Example 5: Process for preparing (3R)-3-[(1,1-dimethylethoxycarbonyl)amino]-4-(2,4,5-trifluorophenyl)butanoic acid

In a round bottomed flask, Compound 5 (1 eq), Boc anhydride (1.1 eq), Triethyl amine (~ 3 eq) was taken in Methanol and stirred for few hours at elevated temperature. After completion of reaction, product was extracted in ethyl acetate and distilled. The solid obtained was purified using toluene to yield the title compound.