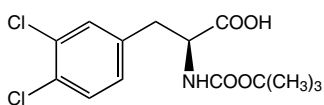


# Chiral Alanines

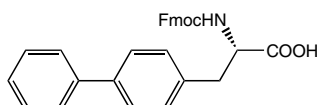
Numerous therapeutic agents incorporate both natural and unnatural  $\alpha$ -amino acids and therefore the desire to develop efficient synthetic routes to control both regio- and stereochemistry remains high. Unnatural amino acid derivatives such as H51968 have been cited in many patents and scientific reports, in the synthesis of potentially useful pharmaceutically active products for the treatment of several medical disorders, including deficiency in growth hormone,<sup>1</sup> gastrointestinal disorders,<sup>2</sup> and mediating immune and inflammatory responses.<sup>3</sup>

The Boc-protected alanine H31317 has been used as an intermediary in a number of studies such as therapeutic agents for treating malignancies<sup>4</sup>, the initial building block for the total synthesis of Verticilide a new Ryanodine-binding inhibitor, and as an agent for improved control of glucose levels in insulin-dependent diabetic patients.<sup>5</sup> Wolin and co-workers have prepared a variety of  $\alpha$ -amino acid derivatives from H52172 as glycine transport inhibitors<sup>6</sup> or H51971 as selective GlyT2 inhibitors for the treatment of the central nervous system.<sup>7</sup> Alfa Aesar has expanded its comprehensive range of Boc and Fmoc protected alanine derivatives.



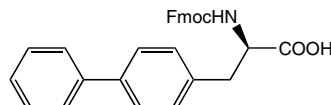
## H52053

N-Boc-3,4-dichloro-L-phenylalanine, 95%  
[80741-39-5]



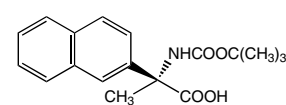
## H52108

3-(4-Biphenyl)-N-Fmoc-D-alanine, 95%  
[205526-38-1]



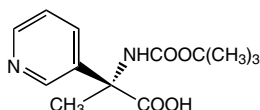
## H52002

3-(4-Biphenyl)-N-Fmoc-L-alanine, 95%  
[199110-64-0]



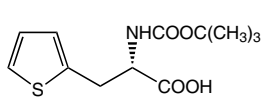
## H51968

N-Boc-2-(2-naphthyl)-D-alanine  
[76985-10-9]



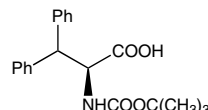
## H51985

N-Boc-2-(3-pyridyl)-D-alanine, 95%  
[98266-33-2]



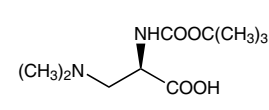
## H51971

N-Boc-3-(2-thienyl)-L-alanine, 95%  
[56675-37-7]



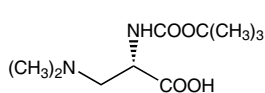
## H52063

N-Boc-3,3-diphenyl-L-alanine, 95%  
[138662-63-2]



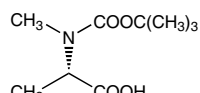
## H52433

N-Boc-3-dimethylamino-D-alanine, 97%  
[110755-32-3]



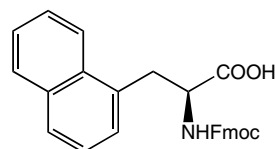
## H52810

N-Boc-3-dimethylamino-L-alanine, 97%  
[94778-71-9]



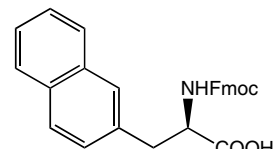
## H31317

N-Boc-N-methyl-L-alanine, 98%  
[16948-16-6]



## H51967

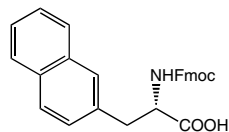
N-Fmoc-3-(1-naphthyl)-L-alanine, 98%  
[96402-49-2]



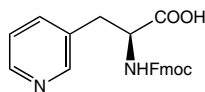
## H51974

N-Fmoc-3-(2-naphthyl)-D-alanine, 95%  
[138774-94-4]

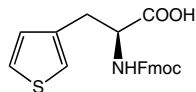
# Chiral Alanines



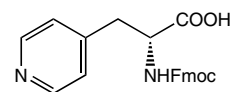
**H52179**  
N-Fmoc-3-(2-naphthyl)-  
L-alanine, 95%  
[112883-43-9]



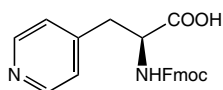
**H52056**  
N-Fmoc-3-(3-pyridyl)-L-alanine,  
95%  
[175453-07-3]



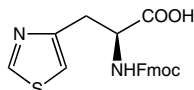
**H52167**  
N-Fmoc-3-(3-thienyl)-L-alanine,  
95%  
[186320-06-9]



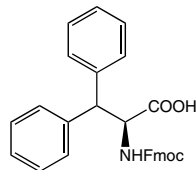
**H52193**  
N-Fmoc-3-(4-pyridyl)-  
D-alanine, 95%  
[205528-30-9]



**H52172**  
N-Fmoc-3-(4-pyridyl)-L-alanine,  
95%  
[169555-95-7]



**H52071**  
N-Fmoc-3-(4-thiazolyl)-  
L-alanine, 95%  
[205528-32-1]



**H52176**  
N-Fmoc-3,3-diphenyl-L-alanine,  
95%  
[201484-50-6]

<sup>1</sup>Novo Nordisk A/S, Patent: US6350767 B1, 2002.

<sup>2</sup>Abbott Laboratories, Patent: US5346907 A1, 1994.

<sup>3</sup>S. Wattanasin, J. Kallen, S. Myers, Q. Guo, M. Sabio, C. Ehrhardt, R. Albert, U. Hommel, G. Weckbecker, K. Welzenbach, & G. Weitz-Schmidt, *Bioorg. & Med. Chem. Lett.*, 2005, **15**, 1217.

<sup>4</sup>Genentech, Inc. Patent: WO2006/69063 A1, 2006.

<sup>5</sup>S. F. Brady, *et al.*, *J. Org. Chem.*, 1987, **52**, 764.

<sup>6</sup>R. L. Wolin, H. Venkatesan, L. Tang, A. Santillan, T. Barclay, S. Wilson, D. H. Lee, & T. W. Lovenberg, *Bioorg. & Med. Chem.*, 2004, **12**, 4477.

<sup>7</sup>Janssen Pharmaceutica, N.V. Patent: WO2005/44810 A1, 2005.