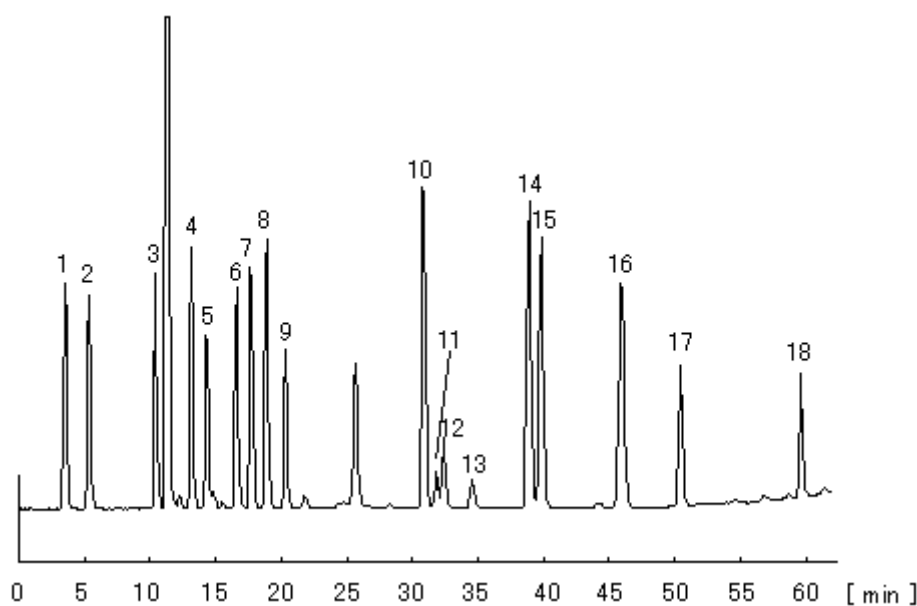


## NBD-アミノ酸

## NBD-Amino acids

蛍光誘導体化試薬 NBD-F(4-Fluoro-7-nitrobenzofurazan)は、第一・第二アミノ酸などと温和な条件下で極めて反応性に富み、発蛍光体は安定です。励起、蛍光波長が比較的長波長の強い蛍光を発生します。試薬自身は蛍光を持ちません。HPLC におけるアミン・アミノ酸の蛍光ラベル化剤として適しています。

4-Fluoro-7-nitrobenzofurazan (NBD-F), a fluorescence derivatizing reagent, reacts with primary and secondary amines under mild conditions, and generates stable derivatives with relatively long emission and excitation wavelengths. The reagent does not fluoresce itself.



1. L-アスパラギン酸 (0.6 pmol)  
L-Aspartic acid (M.W. 133.1)
2. L-グルタミン酸 (0.6 pmol)  
L-Glutamic acid (M.W. 147.1)
3. L-セリン (0.6 pmol)  
L-Serine (M.W. 105.9)
4. グリシン (0.6 pmol)  
Glycine (M.W. 75.1)
5. L-ヒスチジン (0.6 pmol)  
L-Histidine (M.W. 155.2)
6. L-スレオニン (0.6 pmol)  
L-Threonine (M.W. 119.1)
7. L-アラニン (0.6 pmol)  
L-Alanine (M.W. 89.1)
8. L-アルギニン (0.6 pmol)  
L-Arginine (M.W. 174.2)
9. L-プロリン (0.6 pmol)  
L-Proline (M.W. 115.1)

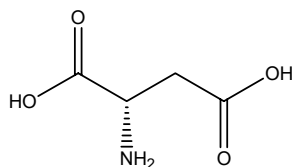
10. L-バリン (0.6 pmol)  
L-Valine (M.W. 117.2)
11. L-シスチン (0.6 pmol)  
L-Cystine (M.W. 240.3)
12. L-メチオニン (0.6 pmol)  
L-Methionine (M.W. 149.1)
13. 塩化アンモニウム (0.6 pmol)  
Ammonium chloride (M.W. 53.5)
14. L-ロイシン (0.6 pmol)  
L-Leucine (M.W. 131.2)
15. L-イソロイシン (0.6 pmol)  
L-Isoleucine (M.W. 131.2)
16. L-フェニルアラニン (0.6 pmol)  
L-Phenylalanine (M.W. 165.2)
17. L-リジン (0.6 pmol)  
L-Lysine (M.W. 146.2)
18. L-チロシン (0.6 pmol)  
L-Tyrosine (M.W. 181.2)

### 【HPLC Conditions】

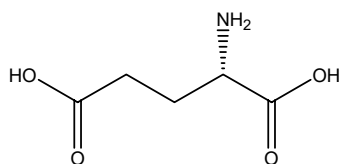
Column : CAPCELL PAK C<sub>18</sub> MG S5 ; 1.5 mm i.d. x 150 mm  
Mobile phase : A) Sodium perchlorate was added to 10 mmol/L citrate buffer (0.08 g citric acid monohydrate and 1.36 g Trisodium citrate dihydrate were dissolved in 500 mL H<sub>2</sub>O) at 75 mmol/L.  
B) CH<sub>3</sub>CN / H<sub>2</sub>O = 50 / 50  
B 5 % -> 37 % (40.0 min) -> 38 % (52.0 min) -> 100 % (60.0 min)  
-> 100 % (65.0 min) -> 5 % (65.1 min) -> 5 % (80.0 min)  
Gradient  
Flow rate : 100 μL/min  
Temperature : 40 °C  
Detection : FL Ex. 480nm, Em. 530nm  
Inj. vol. : 1 μL  
Pretreatment : Standard amino acids solution Type H (17 compounds, 2.5 μmol/mL each, in 0.1 mol/L HCl, Wako Chemicals, Osaka, Japan and other five amino acids (0.1 mol/L HCl solution) were mixed together The mixture was diluted to 0.5 μmol/L with 0.1 mol/L borate buffer (0.28 g of boric acid and 2.0 g of sodium tetraborate decahydrate were dissolved in 100 mL of water). And then, NBD-Fderivatization was carried out on the solution. (For the detailed derivatization protocol, refer to Technical Report "NBD- Amino Acids".)

### 【References】

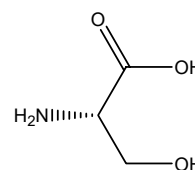
和光純薬工業株式会社 (Wako LIFE SCIENCE '95/'96 3RD EDITION)



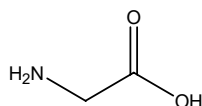
1. L-Aspartic acid



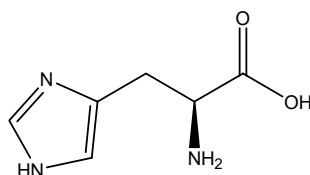
2. L-Glutamic acid



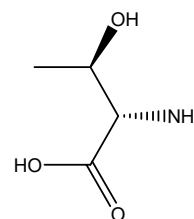
3. L-Serine



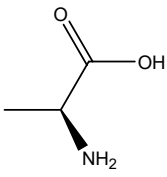
4. Glycine



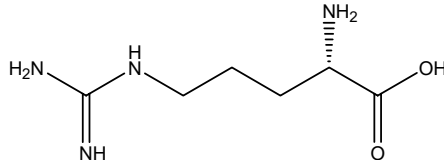
5. L-Histidine



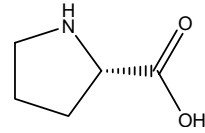
6. L-Threonine



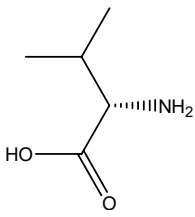
7. L-Alanine



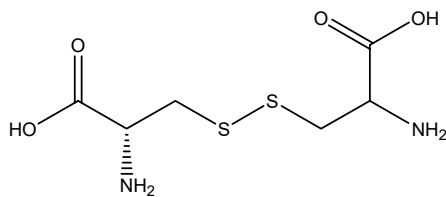
8. L-Arginine



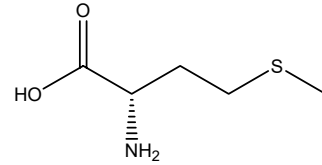
9. L-Proline



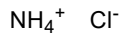
10. L-Valine



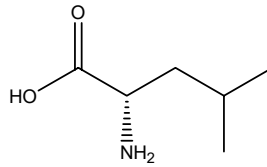
11. L-Cystine



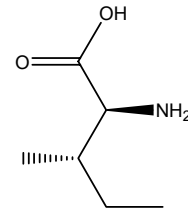
12. L-Methionine



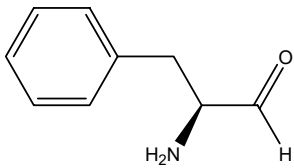
13. Ammonium chloride



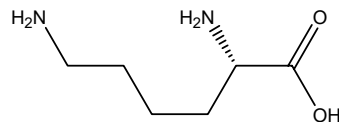
14. L-Leucine



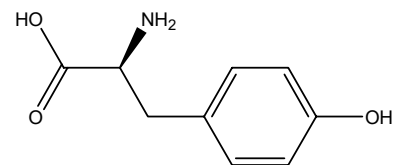
15. L-Isoleucine



16. L-Phenylalanine



17. L-Lysine



18. L-Tyrosine