

MACHEREY-NAGEL

NUCLEODUR[®] 300

C₁₈ ec and C₄ ec



HPLC columns for biochromatography

- Reliable wide pore RP phases for daily routine analysis
- Medium density octadecyl or butyl modification with exhaustive endcapping
- Ideal phases for separation of biomolecules

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Key features

- Reliable wide pore RP phases for daily routine analysis
- Medium density octadecyl or butyl modification with exhaustive endcapping
- Ideal phases for separation of biomolecules

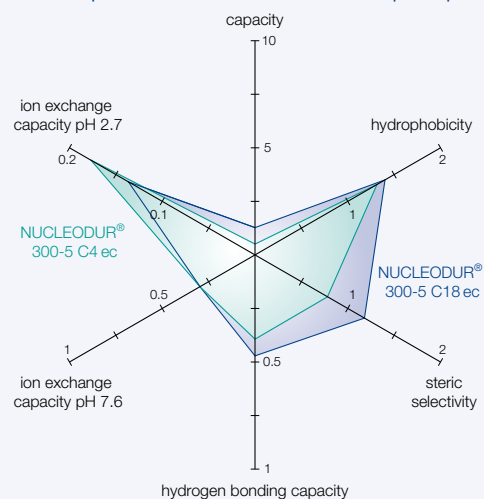
Technical characteristics

- Pore size 300 Å; particle size 5 µm
- Carbon content 4 % for C₁₈, 2.5 % for C₄
- pH stability 1–9, high reproducibility from lot to lot

Recommended applications

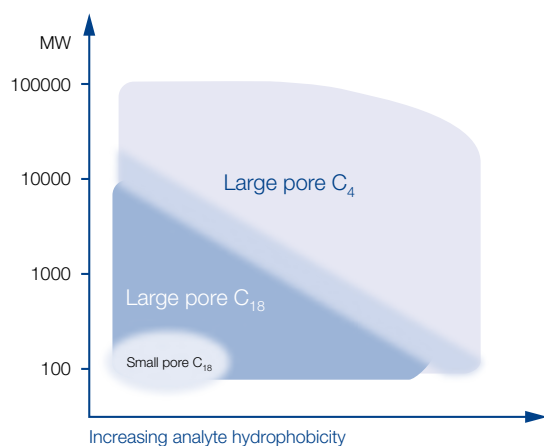
- Biological macromolecules like proteins or peptides
- USP L1 (C₁₈) / USP L26 (C₄)

Tanaka plots of NUCLEODUR® wide pore phases



Wide pore silica for biochromatography

Column selection by analyte characteristics



Stability test of NUCLEODUR® 300-5 C₄ ec

MN Appl. No. 126540

Column: 250 x 4.6 mm NUCLEODUR® 300-5 C₄ ec

Eluent: A) 0.1 % TFA in water
B) 0.08 % TFA in acetonitrile
20–50 % B in 11 min

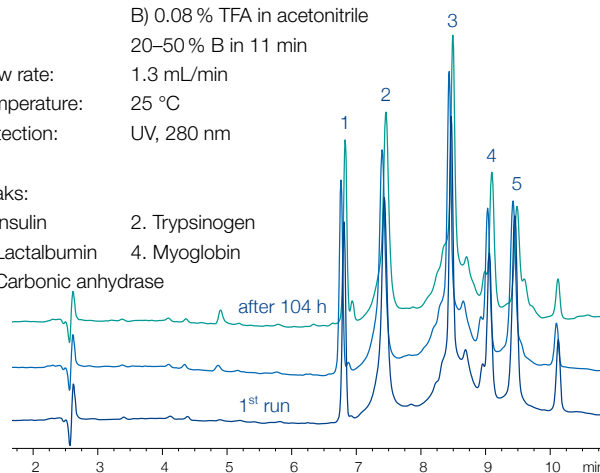
Flow rate: 1.3 mL/min

Temperature: 25 °C

Detection: UV, 280 nm

Peaks:

- Insulin
- Trypsinogen
- Lactalbumin
- Myoglobin
- Carbonic anhydrase



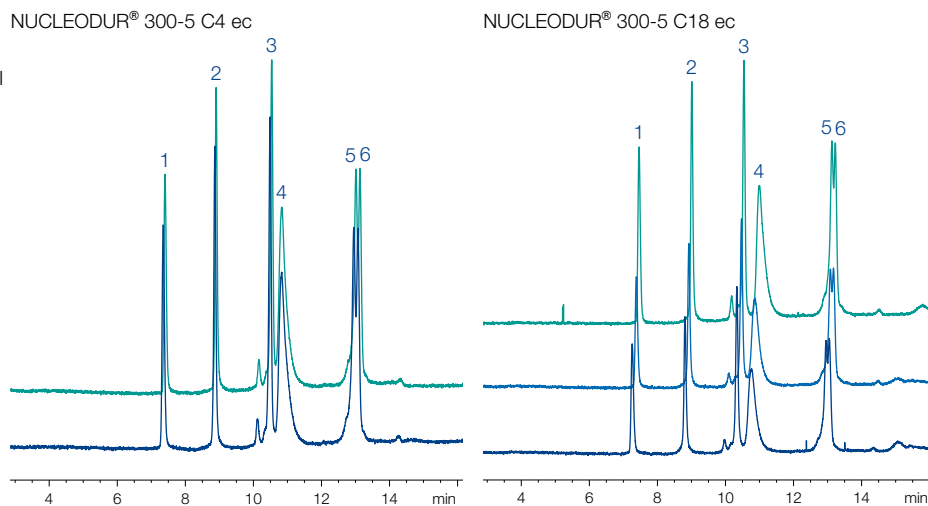
Batch-to-batch reproducibility of NUCLEODUR® 300-5 C₄ ec and NUCLEODUR® 300-5 C₁₈ ec

MN Appl. Nos. 126551 / 126552

Columns: 250 x 4 mm
Eluent: A) 0.1 % TFA in water
B) 0.08 % TFA in acetonitrile
20–60 % B in 15 min
Flow rate: 1 mL/min
Temperature: 25 °C
Detection: UV, 280 nm

Peaks:

- Ribonuclease A
- Cytochrome C
- Lysozyme
- BSA
- β-Lactoglobulin
- β-Lactoglobulin 2



NUCLEODUR® 300 C₁₈ ec and C₄ ec

Column comparison for protein separation

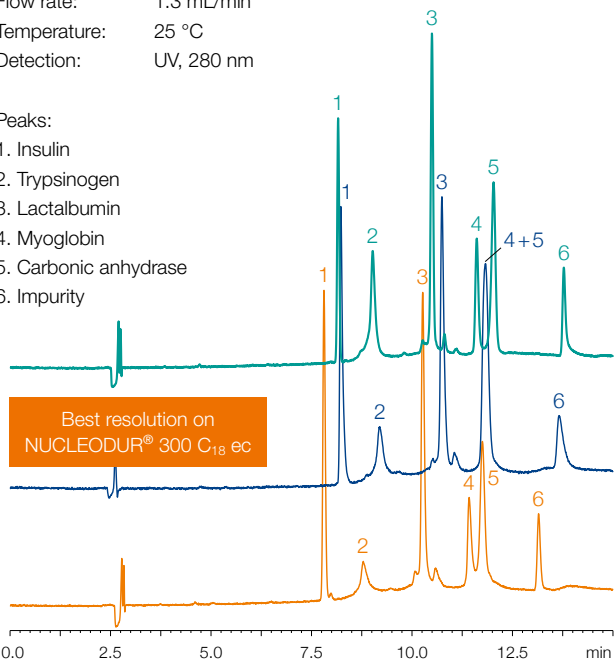
MN Appl. No. 126570

Columns: 250 x 4.6 mm NUCLEODUR® 300-5 C₁₈ ec
 250 x 4.6 mm NUCLEOSIL® 300-5 C₁₈
 250 x 4.6 mm Jupiter® C₁₈, 5 µm

Eluent: A) 0.1 % TFA in water
 B) 0.08 % TFA in acetonitrile
 20–65 % B in 15 min (2 min 65 % B)

Flow rate: 1.3 mL/min
 Temperature: 25 °C
 Detection: UV, 280 nm

- Peaks:
1. Insulin
 2. Trypsinogen
 3. Lactalbumin
 4. Myoglobin
 5. Carbonic anhydrase
 6. Impurity



Comparison of narrow and wide pore NUCLEODUR® for the separation of proteins

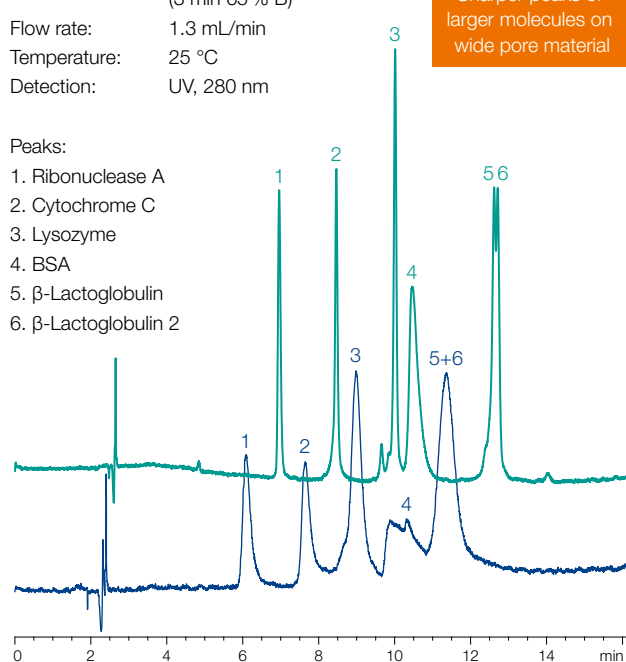
MN Appl. No. 126590

Columns: 250 x 4,6 mm NUCLEODUR® 300-5 C₁₈ ec
 250 x 4,6 mm NUCLEODUR® C₁₈ Gravity, 5 µm

Eluent: A) 0.1 % TFA in water
 B) 0.08 % TFA in acetonitrile
 20–65 % B in 15 min
 (3 min 65 % B)

Flow rate: 1.3 mL/min
 Temperature: 25 °C
 Detection: UV, 280 nm

- Peaks:
1. Ribonuclease A
 2. Cytochrome C
 3. Lysozyme
 4. BSA
 5. β-Lactoglobulin
 6. β-Lactoglobulin 2



Separation of cytochrome C of different origins on NUCLEODUR® 300 RP column

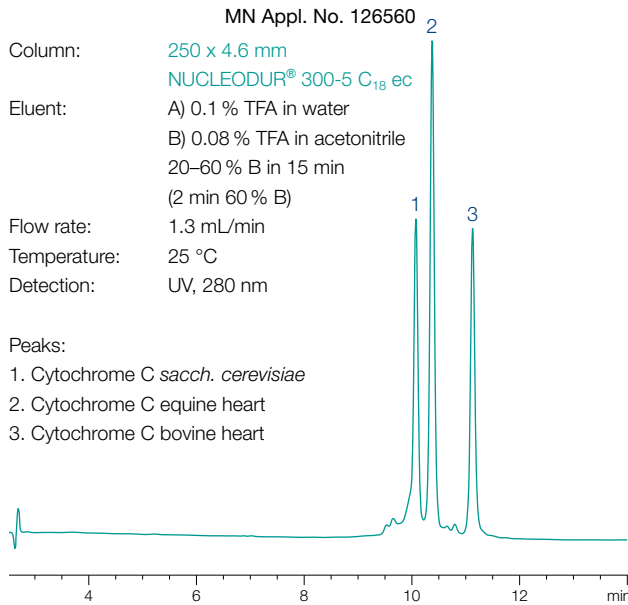
MN Appl. No. 126560

Column: 250 x 4.6 mm
 NUCLEODUR® 300-5 C₁₈ ec

Eluent: A) 0.1 % TFA in water
 B) 0.08 % TFA in acetonitrile
 20–60 % B in 15 min
 (2 min 60 % B)

Flow rate: 1.3 mL/min
 Temperature: 25 °C
 Detection: UV, 280 nm

- Peaks:
1. Cytochrome C *sacch. cerevisiae*
 2. Cytochrome C equine heart
 3. Cytochrome C bovine heart



Protein test

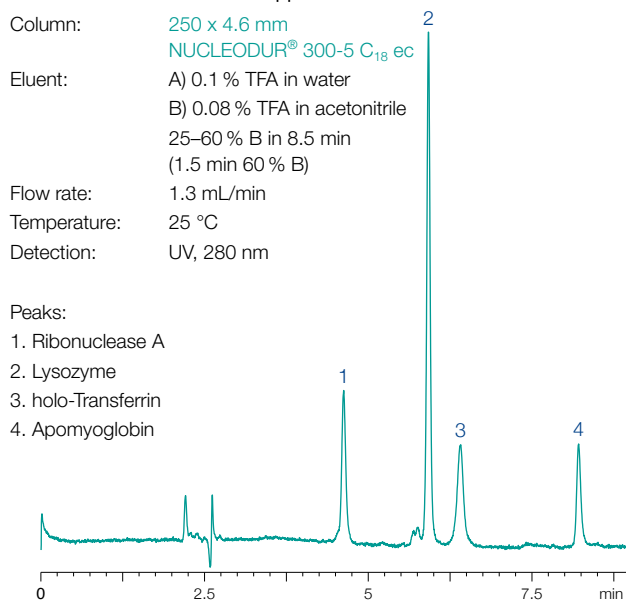
MN Appl. No. 126580

Column: 250 x 4.6 mm
 NUCLEODUR® 300-5 C₁₈ ec

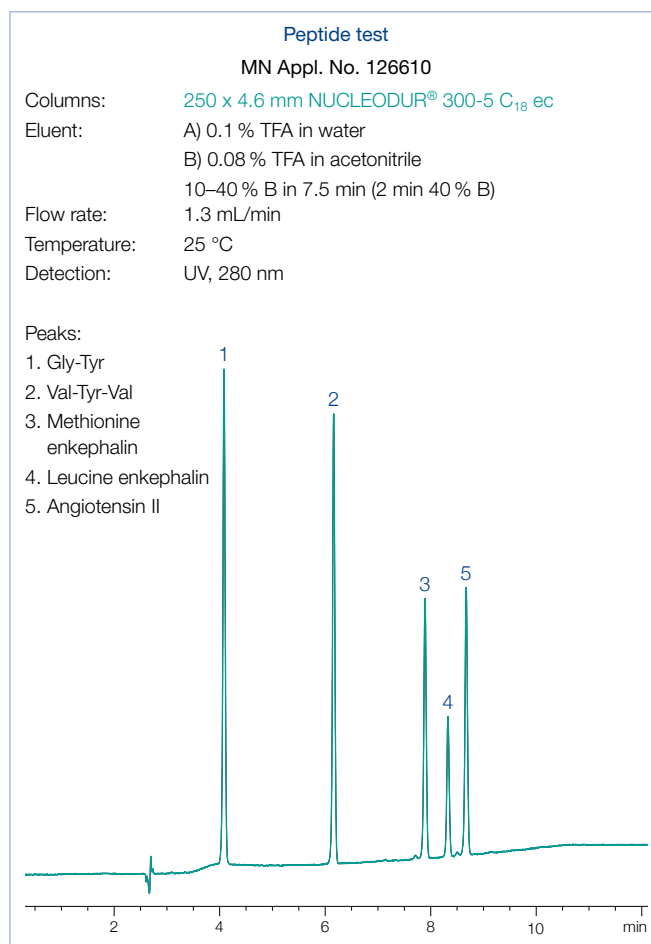
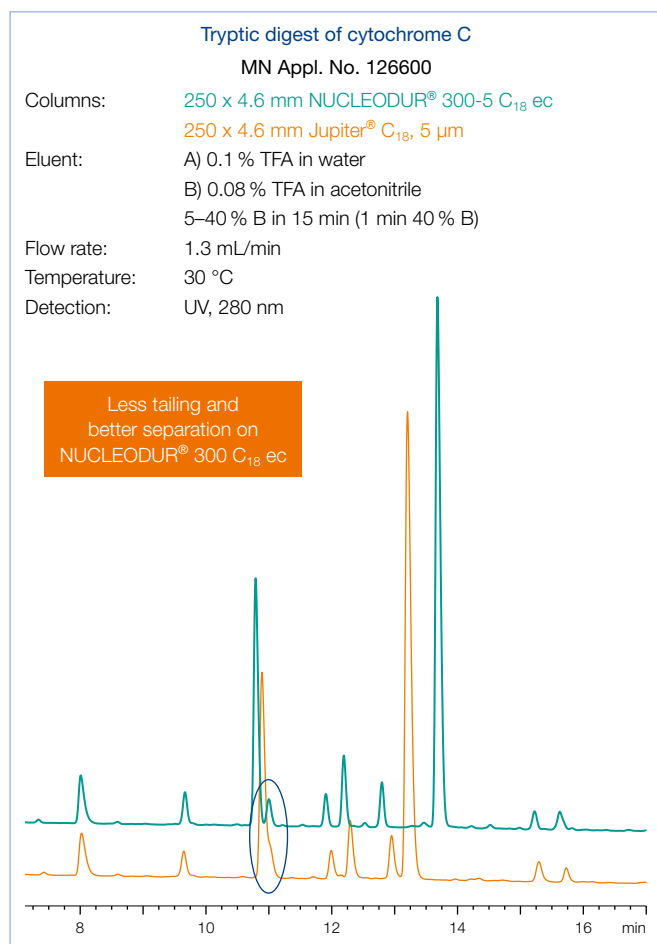
Eluent: A) 0.1 % TFA in water
 B) 0.08 % TFA in acetonitrile
 25–60 % B in 8.5 min
 (1.5 min 60 % B)

Flow rate: 1.3 mL/min
 Temperature: 25 °C
 Detection: UV, 280 nm

- Peaks:
1. Ribonuclease A
 2. Lysozyme
 3. holo-Transferrin
 4. Apomyoglobin



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Ordering information

NUCLEODUR® 300-5 C₁₈ ec

Octadecyl modification, endcapped, pore size 300 Å, particle size 5 µm; eluent in column acetonitrile – water

Length	100 mm	125 mm	150 mm	250 mm	EC guard columns*
2 mm ID	760183.20	760184.20	760185.20	760186.20	761988.20
3 mm ID	760183.30	760184.30	760185.30	760186.30	761988.30
4 mm ID	760183.40	760184.40	760185.40	760186.40	761988.30
4.6 mm ID	760183.46	760184.46	760185.46	760186.46	761988.30

NUCLEODUR® 300-5 C₄ ec

Butyl modification, endcapped, pore size 300 Å, particle size 5 µm; eluent in column acetonitrile – water

Length	100 mm	125 mm	150 mm	250 mm	EC guard columns*
2 mm ID	760193.20	760194.20	760195.20	760196.20	761989.20
3 mm ID	760193.30	760194.30	760195.30	760196.30	761989.30
4 mm ID	760193.40	760194.40	760195.40	760196.40	761989.30
4.6 mm ID	760193.46	760194.46	760195.46	760196.46	761989.30

* EC guard columns require the Column Protection System guard column holder 718966

www.mn-net.com

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