

COSMOSIL

HPLC Column for Separation of Soluble Carbon Nanotubes

COSMOSIL CNT

- **Size-based separation of soluble carbon nanotubes**
- **Hydrophilic group coating silica packing material**
- **Three types of pore size (300 Å , 1000 Å , 2000 Å)**
- **High durability**

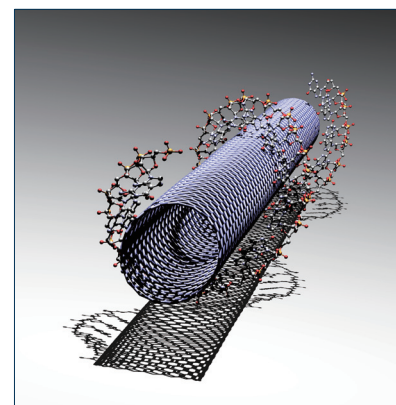


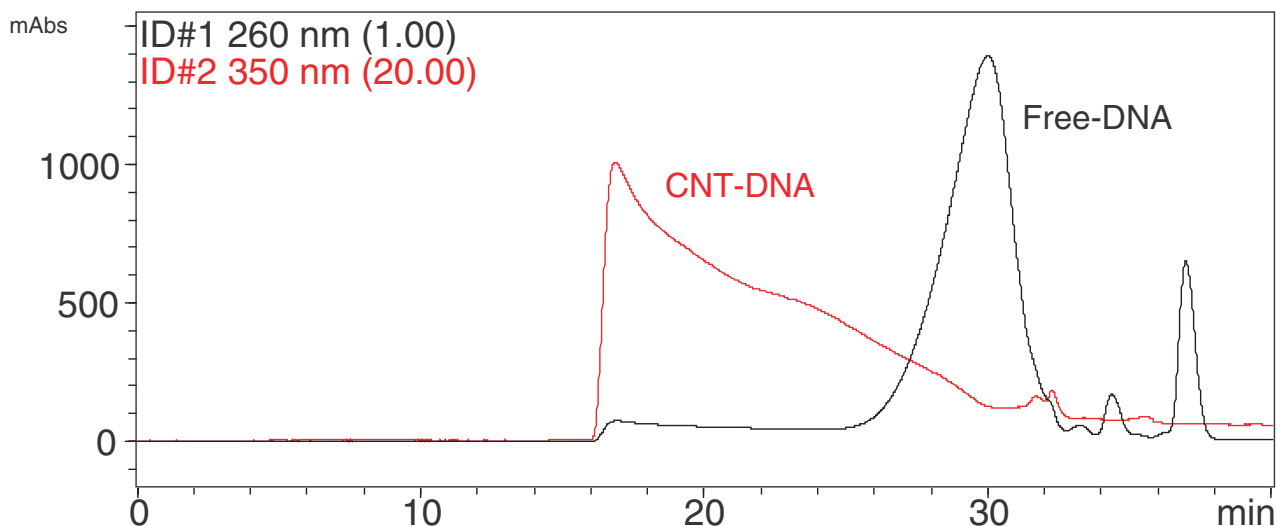
Image courtesy of Dr. Y. Ito, Univ. of Oxford

| | CNT-300 | CNT-1000 | CNT-2000 |
|-----------------------|-------------------------------------|----------------|----------------|
| Silica Gel | High Purity Porous Spherical Silica | | |
| Average Particle Size | 5 µm | | |
| Average Pore Size | approx. 300 Å | approx. 1000 Å | approx. 2000 Å |
| Stationary Phase | Hydrophilic Group (Neutral) | | |
| pH range | 2 - 7.5 | | |
| Pressure | 15 MPa and below | | |

COSMOSIL CNT series are ideal for separation of soluble carbon nanotubes based on sizes. COSMOSIL CNT series are packed with hydrophilic group-bonded silica packing material. The columns are specially designed to avoid adsorption of carbon nanotubes to silica support and thus ensure high resolution and maximum recovery of carbon nanotubes. COSMOSIL CNT series are available in three different pore sizes, 300 Å , 1000 Å and 2000 Å , respectively.

Size-based Separation of Carbon Nanotubes

COSMOSIL CNT columns offered improved separation for DNA wrapped carbon nanotubes by connecting three columns with different pore sizes.

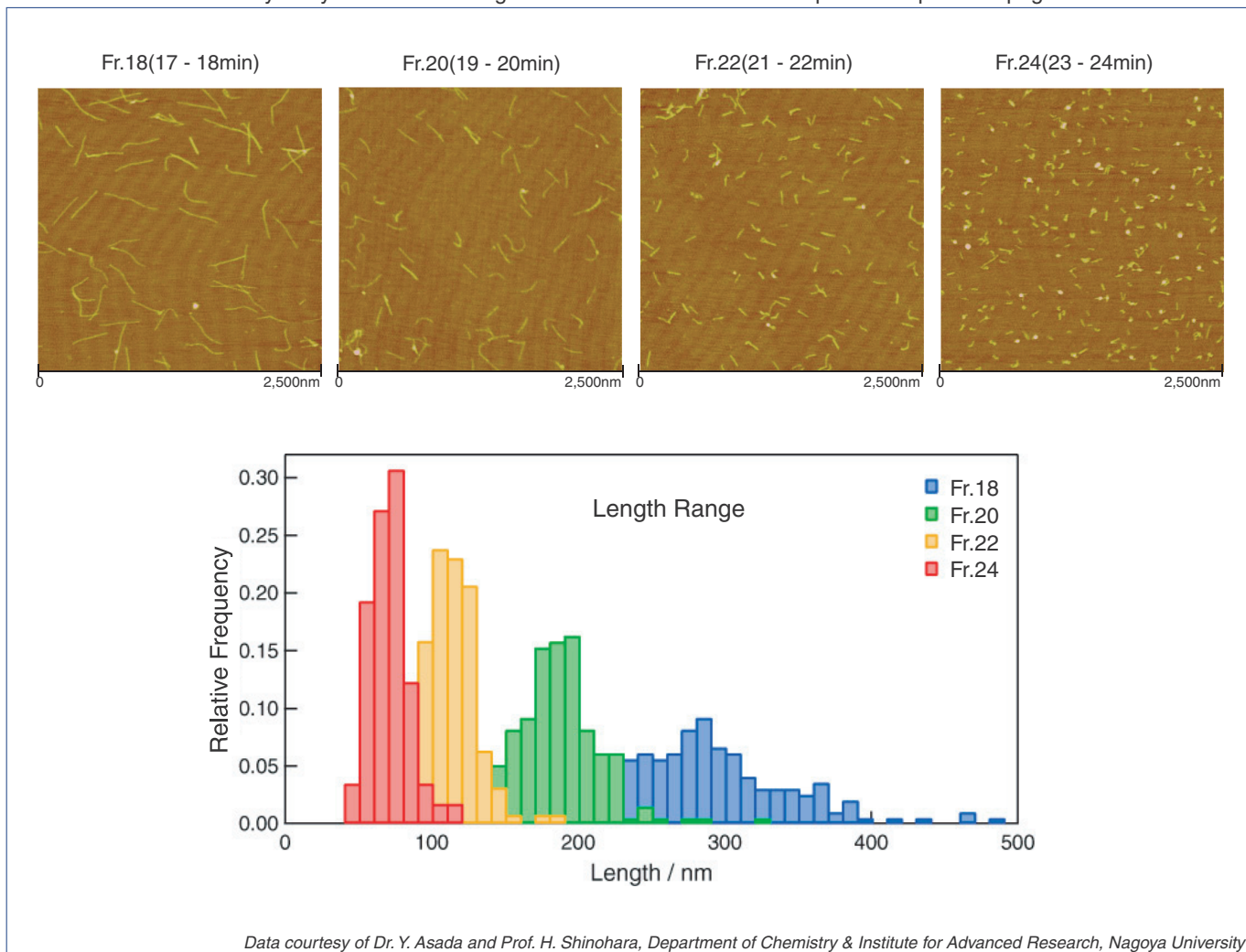


Column COSMOSIL CNT-300 7.5 mm I.D. x 300 mm
 COSMOSIL CNT-1000 7.5 mm I.D. x 300 mm
 COSMOSIL CNT-2000 7.5 mm I.D. x 300 mm
 Mobile phase 0.5 mmol/l EDTA, 200 mmol/l NaCl, 40 mmol/l Tris-Tris HCl(pH7.0)
 Flow rate 1.0 ml/min
 Temperature 40 °C
 Detection UV 260 nm(x 1), 350 nm(x 20)
 Sample DNA-wrapped CNT(CNT-DNA)
 Injection vol. 500 µl
 Pressure 8.1 MPa

Sample courtesy of Prof. H. Shinohara, Department of Chemistry & Institute for Advanced Research, Nagoya University

AFM (Atomic Force Microscope) Analysis

The data below show analysis by AFM of CNT length of each fraction from the sample on the previous page.



Ordering Information

| Product Name | Column Size | Product Number |
|---------------------------------|----------------------|----------------|
| COSMOSIL CNT-300 Guard Column | 7.5 mm I.D. x 50 mm | 09194-81 |
| COSMOSIL CNT-300 Packed Column | 7.5 mm I.D. x 300 mm | 09195-71 |
| COSMOSIL CNT-1000 Guard Column | 7.5 mm I.D. x 50 mm | 09196-61 |
| COSMOSIL CNT-1000 Packed Column | 7.5 mm I.D. x 300 mm | 09197-51 |
| COSMOSIL CNT-2000 Guard Column | 7.5 mm I.D. x 50 mm | 09198-41 |
| COSMOSIL CNT-2000 Packed Column | 7.5 mm I.D. x 300 mm | 09199-31 |

Other size may be available. Please enquire.

For research use only, not intended for diagnostic or drug use.