Inertsil ODS-3 2um
Examples of High Throughput Analyses

Analytical Condition

Column: *Inertsil ODS-3*
Eluent: *A: Acetonitrile*
B: 0.1% Phosphoric Acid
A/B=15/85
Flow Rate: *0.5mL/min., 1.0mL/min.*
Column Temperature: *40C*
Detector: *PDA 275nm*
Injection Volume: *10uL (4.6mmI.D.), 5uL (3.0mmI.D.)*

Sample

1. *Gallic acid* *(0.17mg/mL)*
2. *Vanillic acid* *(0.17mg/mL)*
2`. *Vanillin* *(Vanillic acid-derived impurity)*
3. *p-Coumaric acid* *(0.17mg/mL)*
4. *Ferulic acid* *(0.17mg/mL)*
5. *m-Coumaric acid* *(0.17mg/mL)*

*The following slides show High Throughput analyses using Inertsil ODS-3 3um & **2um** HPLC columns*

ISO14001: Save Energy and Resources!!!
Reduce Amount of Eluent with Smaller ID Inertsil Columns!!!

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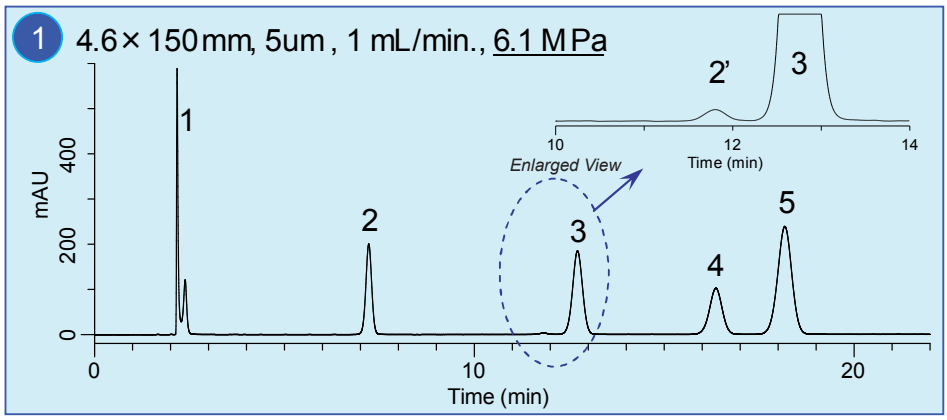
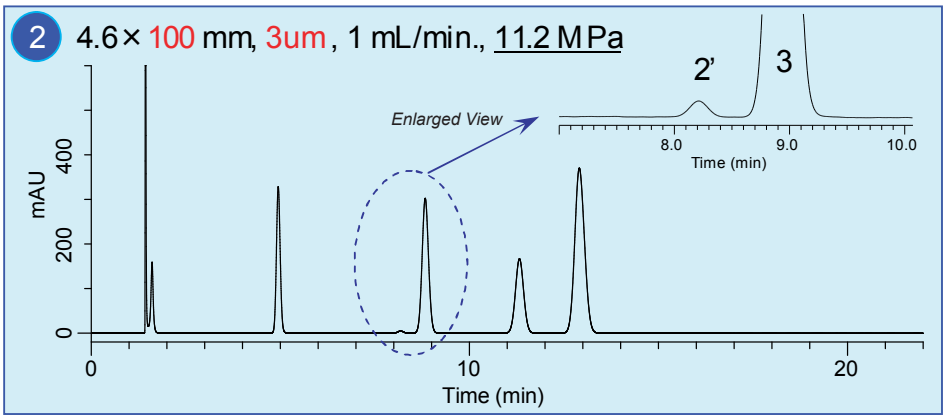
Downsizing Application from a 5um to 3um



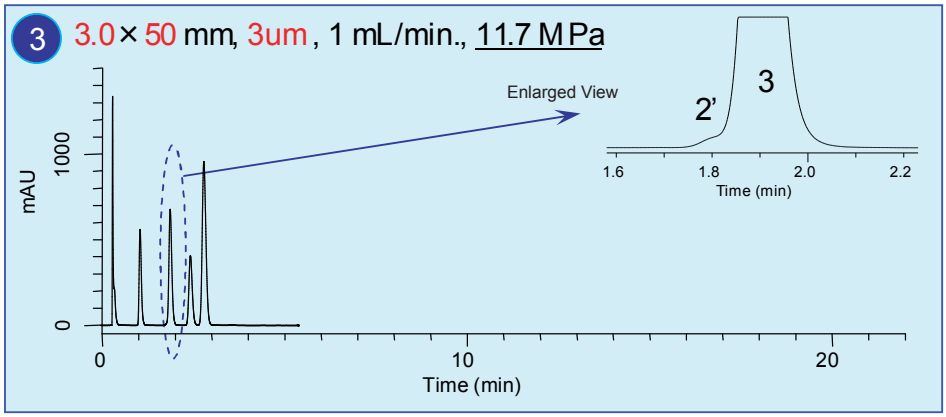
Remarks:
** All peaks are well separated.*

Next Procedure:
- Shorten the column length =□ □□ Shorter analysis time.
- Changing the packing material to a 3um =□For higher resolution.



Remark:
** Obtained the same resolution with shorter analysis time.*

Next Procedure:
- Shorten the column length =□ Shorter analysis time.
- Reducing the I.D. size =□ Reduced consumption of an eluent.
- Using the same flow rate =□ Shorter analysis time.



Remarks:
* The analysis time was shortened to 1/6 compared to the initial analysis.
* However, peak 2` and 3 were not separated.

Reference; Optimal Flow Rate:
4.6mmI.D. = 1.0mL/min
3.0mmI.D. = 0.4mL/min

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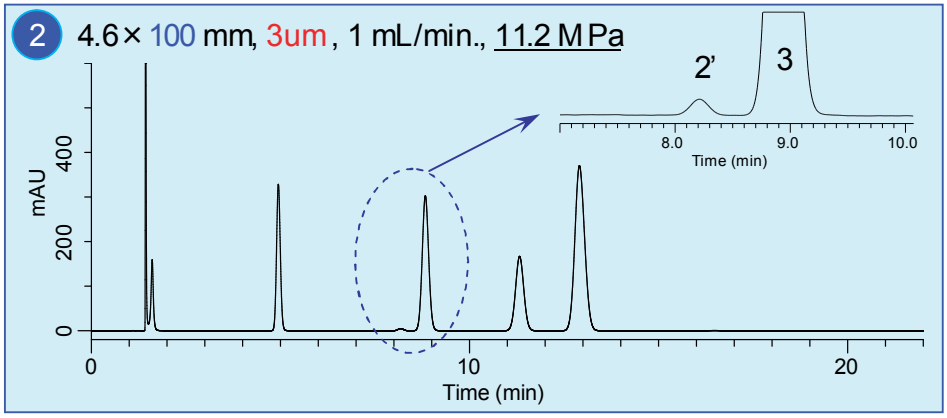
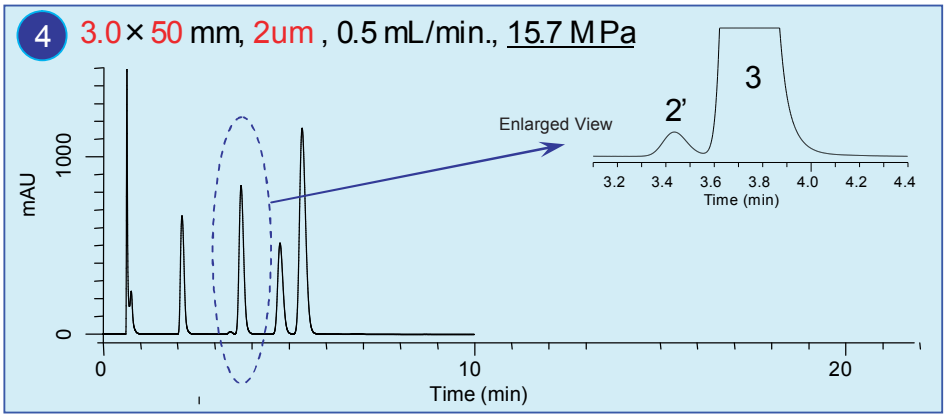
Downsizing Application from a 5um to 2um



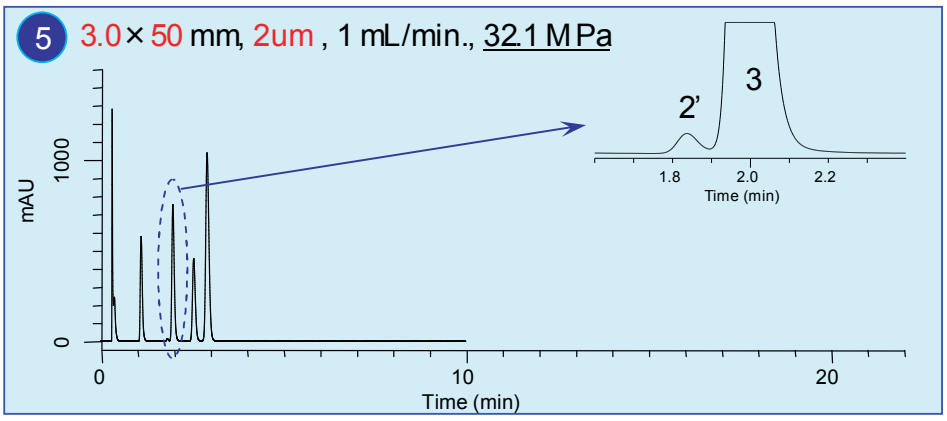
Remark:
** All peaks are well separated.*

Next Procedure:
- Shorten the column length =□ □ □ Shorter analysis time.
- Reducing the I.D. size =□ □ □ Reduced consumption of an eluent.
- Changing the packing material to a 2um =□ Higher resolution.



Remarks:
** The analysis time was shortened to 1/3 compared to the initial analysis.*
** In addition, complete separation between peak 2` and 3 is obtained.*

Next Procedure:
- Adjusting the flow rate =□ Higher resolution and shorter analysis time.



Remarks:
** The analysis time was shortened to 1/6 compared to the initial analysis.*
** In addition, complete separation between peak 2` and 3 is obtained.*

Reference; Optimal Flow Rate:
4.6mmI.D. = 1.0mL/min
3.0mmI.D. = 0.4mL/min

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Results

Chromatogram	Column Dimension	Particle Size	Flow Rate	Separation between Peak 2` & 3	Analysis Time	Consumption of Eluent	Pressure
1	4.6x150mm	5um	1mL/min	Good	1	20mL	6.1MPa
2	4.6x150mm	5um	1mL/min	Good	2/3	13mL	11.2MPa
3	3.0x50mm	3um	1mL/min	Poor	1/6	3.5mL	11.7MPa
4	3.0x50mm	2um	0.5mL/min	Good	1/3	3.5mL	15.7MPa
5	3.0x50mm	2um	1mL/min	Good	1/6	3.5mL	32.1MPa

Remark:

** The analysis time and eluent consumption are both reduced successfully at the same time using Inertsil ODS-3 2um.*