

# UHPLC method analysis of huang qin extract for injection and method transfer to HPLC

## Application Note

Durg Development and QA/QC

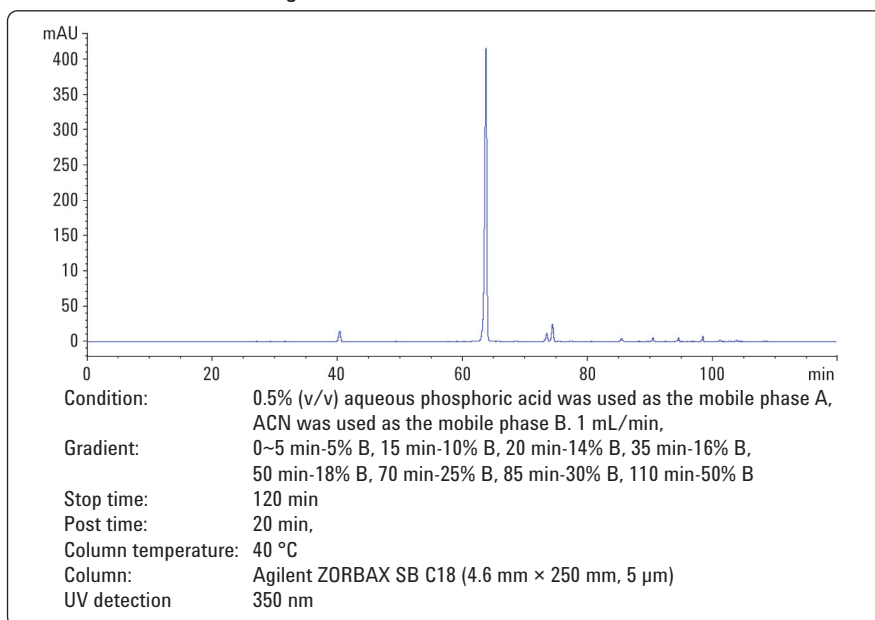
### **Abstract**

The analysis of Traditional Chinese Medicine (TCM) by HPLC typically requires a long cycle time of greater than 2 hours. This is inefficient for both method development and sample analysis. UHPLC with sub-2- $\mu\text{m}$  (STM) technology is currently the most popular technology in the liquid chromatography field. It has distinct superiority in separation and speed over traditional HPLC technology. The Agilent 1290 Infinity LC system has a broad power range. It exhibits significant compatibility for both HPLC and UHPLC applications. Additionally, the method transfer between the Agilent 1290 Infinity LC system and the traditional Agilent 1200 series LC system is seamless.

This Application Note shows how a UHPLC method was optimized to analyze a huang qin extract injection using the Agilent 1290 Infinity LC system and Agilent ZORBAX RRHD 1.8  $\mu\text{m}$  column. The resulting cycle time was 15% of the original method. The method was then transferred to an Agilent 1200 Series LC system. The results of both UHPLC and transferred HPLC methods illustrated that these are more effective than the original HPLC method.

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**Figure 1**  
Initial separation conditions.



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The results of the three methods demonstrated that the optimized UHPLC method was more efficient than the HPLC method. The cycle time was less than 15% of the original without lost resolution. In addition, there was a 94% reduction in solvent consumption with the 2.1 mm diameter column.

## Configuration

### Agilent 1290 Infinity LC system

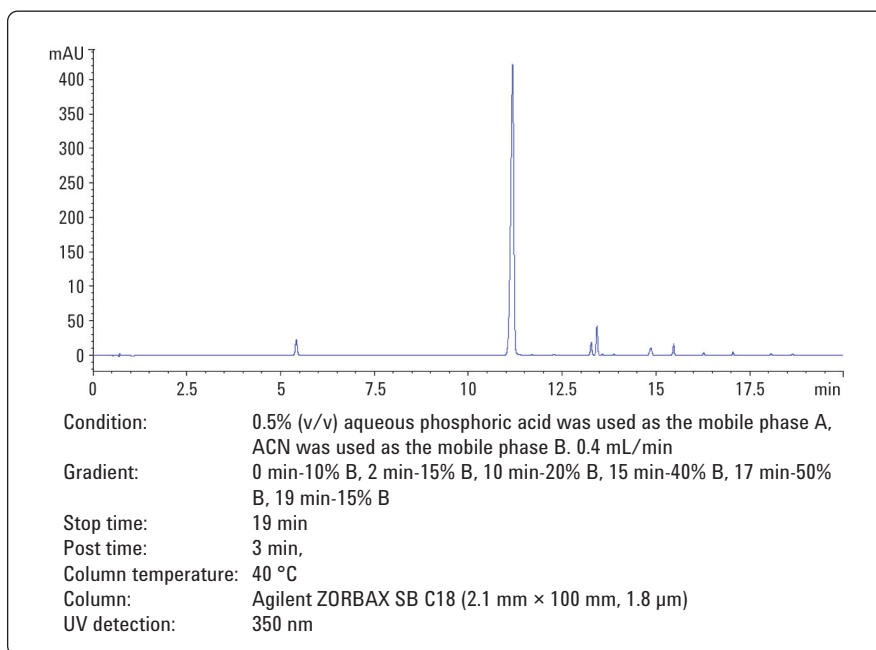
- Agilent 1290 Infinity Binary Pump with Integrated Vacuum Degasser (G4220A)
- Agilent 1290 Infinity Autosampler (G4226A)
- Agilent 1290 Infinity Thermostatted Column Compartment (G1316C)
- Agilent 1200 Diode Array Detector (G1315C)

### Agilent 1200 Series LC system

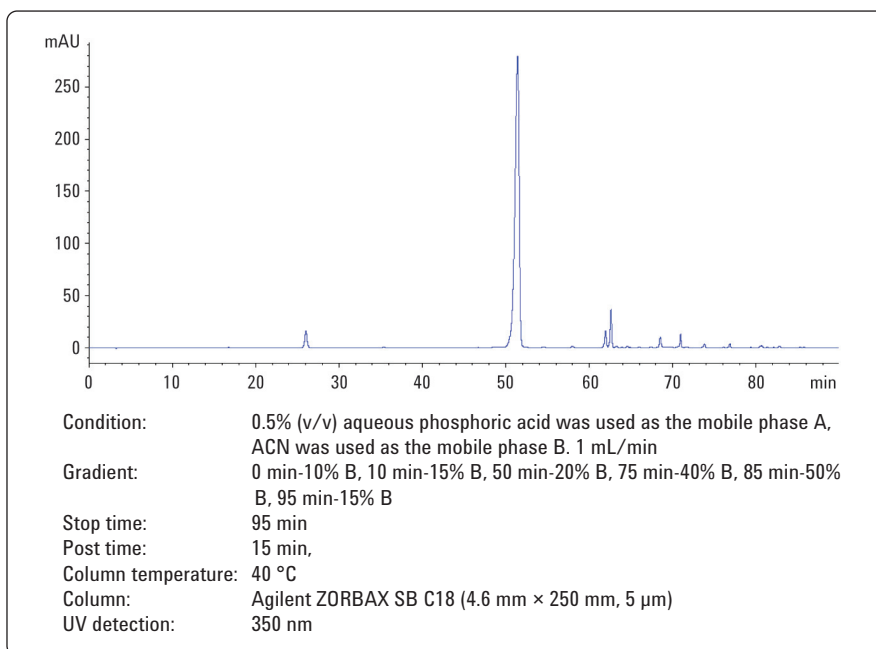
- Agilent 1200 Series Vacuum Degasser (G1379A)
- Agilent 1200 Series Quaternary Pump (G1311A)
- Agilent 1200 Series Autosampler (G1311A)
- Agilent 1200 Series Thermostatted Column Compartment (G1316A)
- Agilent 1200 Series Variable Wavelength Detector (G1314A)

## Conclusion

The Agilent 1290 Infinity LC system provides faster separation and lower solvent consumption by using a narrow bore STM column. Method transfer between the Agilent 1290 Infinity LC system and traditional HPLC was possible by adjusting the gradient time to keep the gradient slope and stationary phase constant. Another benefit of this UHPLC method is the narrow bore column at lower flow rate. The solvent consumption is much lower, which is important for daily QC analysis.



**Figure 2**  
Optimized separation conditions on Agilent 1290 Infinity LC system.



**Figure 3**  
Transferred method from an Agilent 1290 Infinity LC system to an Agilent 1200 Series LC system.

[www.agilent.com/chem/1290](http://www.agilent.com/chem/1290)

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