

The-LCP

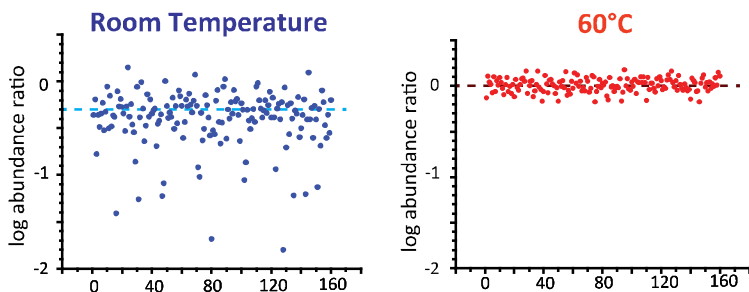
thermo-stabilized platform for high temperature nanoLC separations



Features

- NanoLC integrated with ESI ^{patent pending}
- Temperature variable from room temperature to 65°C with 0.05°C accuracy
- Two CCD cameras to observe electrospray
- Flow rates from 10 to 400 nL/min
- Variable length silica capillary precolumn (2-5 cm) and analytical column (10-200 cm)

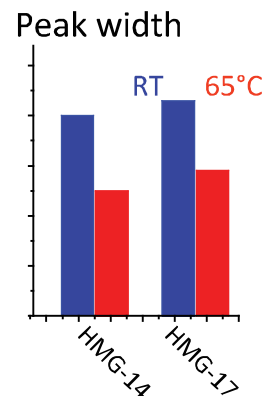
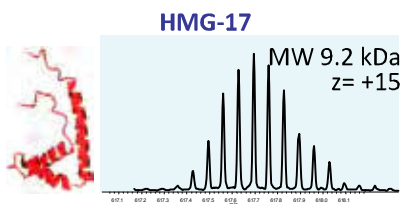
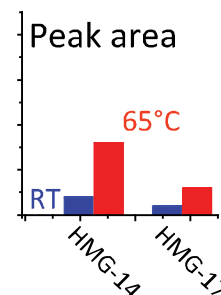
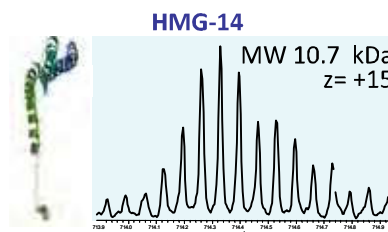
Improved reproducibility of quantitative proteomic profiling



Normalized areas of 160 LC peaks from the LC-MS analysis of a 10-protein digest. LC separations were performed using a 40-min long gradient at room temperature and at 60°C in triplicates.

Averaged peak area gain factor is 2.2 for LC-MS signals recorded at 60°C compared to those at room temperature.

LC separation of small proteins - increase in LC-MS peak area and reduction of chromatographic peak width



LTQ-Orbitrap MS spectra

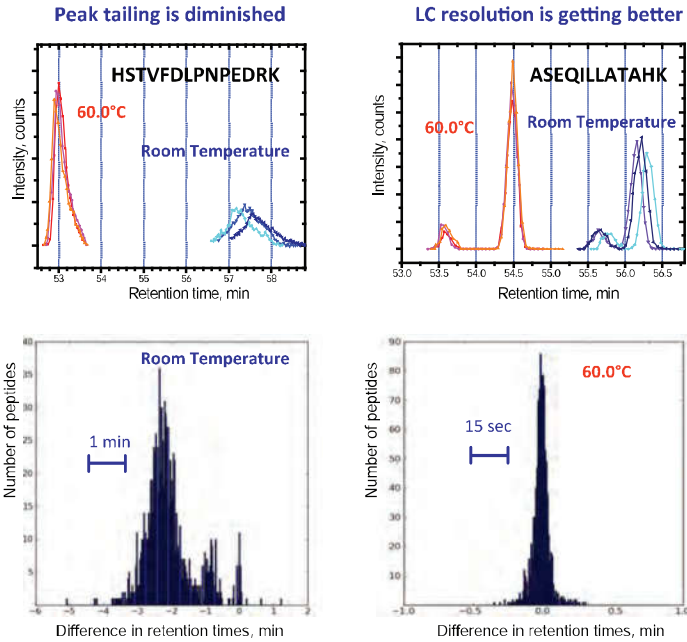
LC column Magic C18, 3 μm , 100 \AA pores; 75 μm i.d., 20 cm long; flow rate 250 nL/min

LC column: 75 μm i.d., 20 cm long, packed with Magic C18AQ 3 μm , 200 \AA pores; flow rate 250nL/min

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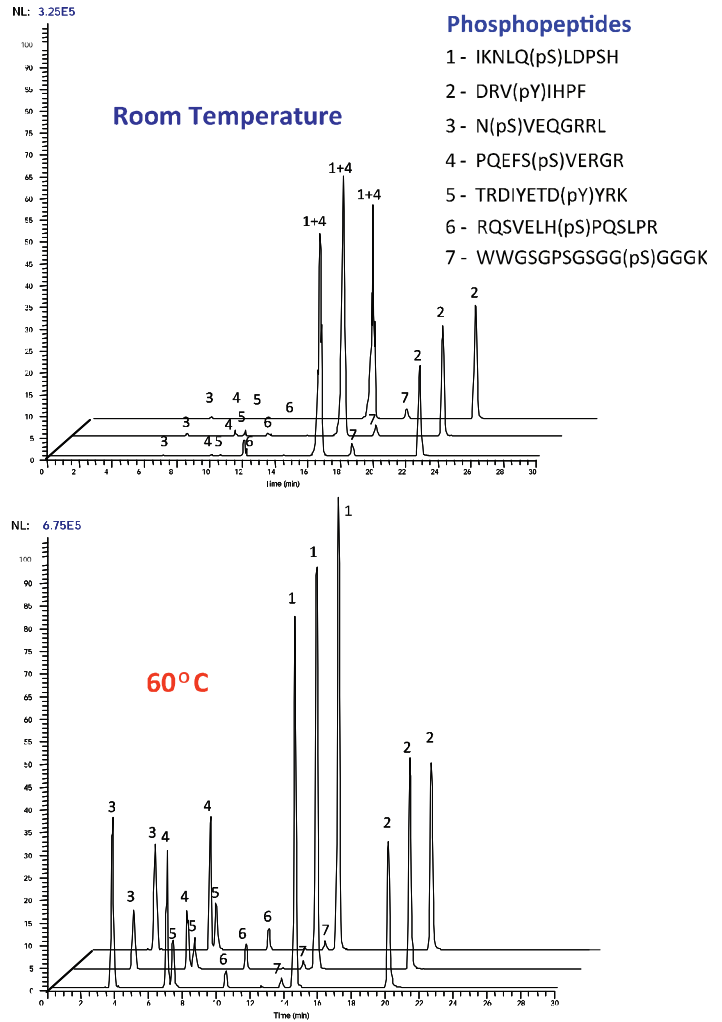
Superior retention time reproducibility between consecutive LC runs



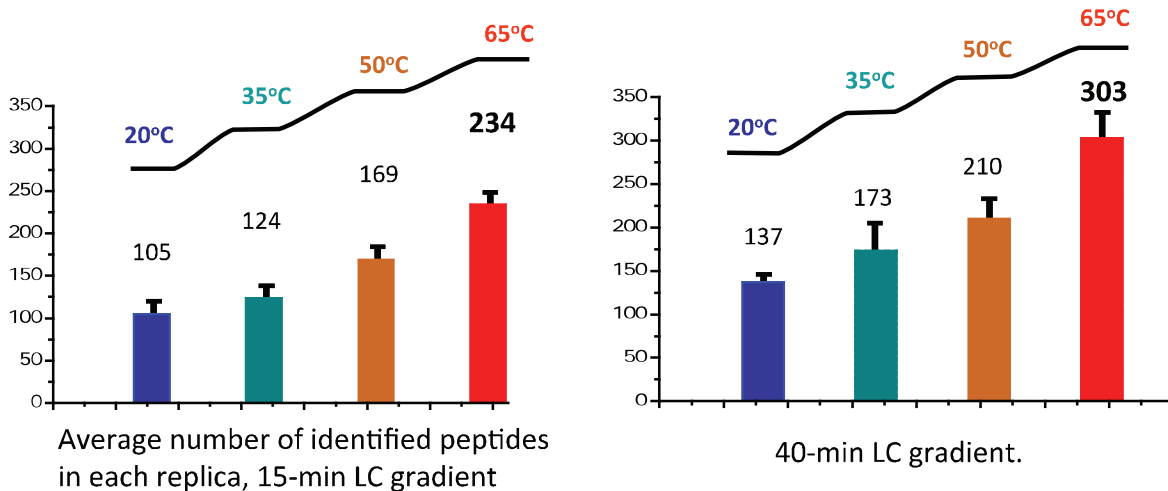
LC-MS analyses of lysates of mouse kidney mitochondria at RT (~20°C) and at 60.0°C. Significant improvement in chromatographic reproducibility, resolution, decrease in peak tailing, increase in peak heights.

Benefits

- Improved resolution and reproducibility in HPLC
- Improved peptide/protein recovery
- Lower back pressure for UPLC



More peptides identified in the LC-MS analysis of protein digests



10-protein digest, LTQ-Orbitrap; LC column Magic C18, 3-µm, 100 Å pores; 75-µm i.d., 20-cm long; flow rate 250 nL/min