



*HDAC8 protein sample with 50 mM sodium phosphate, 100 mM  $^{15}\text{NH}_4\text{Cl}$ , 1 mM TCEP, 1 mM  $\text{NaN}_3$ , pH 8.0*

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**Field strength:** 500 MHz

### Why is this your favorite spectrum?

NMR shows the bound ammonium ( $^{15}\text{N}$ ) peak to one among two potassium binding sites of HDAC8 protein. The free ammonium exchanges fast in solution so only the bound ammonium shows this peak in  $^{15}\text{N}$ -edited spectra. NMR shows it directly with high spatial resolution for a weak binding event compared to other techniques followed in biochemistry like enzyme activity or stability, fluorescence or isothermal titration calorimetry.

Comments: If you vary pH, more interesting things can be observed when ammonium ( $^{15}\text{N}$ ) ion replaces potassium in such proteins.