## Structural Parameters of Several Lanthanide Clusters

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This work presents key structural parameters for a series of amino acid-chelated  $\mu_3$ -hydroxide-containing polygadolinium (and lanthanide analog) complexes with potential as high relaxivity MRI contrast agents. The structures of perchlorate salts of  $D_{4h}$ -symmetry  $Ln_{14}(\mu_4-OH)_2(\mu_3-OH)_{16}(OH_2)_8(serine)_{20}^{3+}$ ,  $D_{5h}$ -symmetry  $Ln_{15}(\mu_5-Br)(\mu_3-OH)_{20}(\mu_3-histidinate)_{15}(\mu-OH_2)_8(OH_2)_{20}^{9+}$ ,  $T_d$ -symmetry  $Ln_4(\mu_3-OH)_4(valine)_4(OH_2)_8^{8+}$  and  $Ln_2(alanine)_4$  (OH<sub>2</sub>)<sub>8</sub><sup>6+</sup> complexes will be presented.

Structural parameters (Gd-O and Gd<sup>...</sup>H distances, Gd-water tilt angles, and H-bonding) that may play a significant role in MRI relaxation mechanisms for these novel complexes will be presented. We will collect neutron diffraction data on the dysprosium analog of one of the complexes at the Intense Pulsed Neutron Source (IPNS) at Argonne National Laboratory in April and hope to include these results.

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