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标题: Sugar-metal ion interactions: the coordination behaviors of lanthanum with erythritol
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摘要: Three novel lanthanum chloride-erythritol complexes (LaCl3 center dot C4H10O4 center dot 5H(2)O (LaE(I)), LaCl3 center dot C4H10O4 center dot 3H(2)O (LaE(II)), and LaCl3 center dot 1.5C(4)H(10)O(4) (LaE(III)) were synthesized and characterized by single crystal X-ray diffraction, FTIR, far-IR, THz, and Raman spectroscopy. The coordination number of La3+ is nine. LaE(I) and LaE(II) have similar coordination spheres, but their hydrogen bond networks are different. Erythritol exhibits two coordination modes: two bidentate ligands and tridentate ligands in LaE(III). Chloride ions and water coordinate with La3+ or participate in the hydrogen-bond networks in the three complexes. Crystal structures, FTIR, FIR, THz, and Raman spectra provide detailed information on the structures and coordination of hydroxyl groups to metal ions in the metal-carbohydrate complexes. (C) 2012 Elsevier Ltd. All rights reserved.
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