Synthesis of AM15C5 Bonded Merrifield Peptide Resin and its Separating Properties

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A 2-aminomethyl-15-crown-5 (AM15C5) bonded Merrifield peptide resin was synthesized. The capacity of this crown ion exchanger was 2.25 meq/g of dry resin. The heavier isotopes of magnesium were enriched in the solution phase, while the lighter isotopes were enriched in the resin phase. The hydration and isotope mass effects dominated over those of the complexation and properties of the exchanger. The separation factors of $^{24}\text{Mg}^{2+}/^{25}\text{Mg}^{2+}$, $^{24}\text{Mg}^{2+}/^{26}\text{Mg}^{2+}$, and $^{25}\text{Mg}^{2+}/^{26}\text{Mg}^{2+}$ isotope pair fractionations were 1.0012, 1.0023, and 1.0011, respectively.