

# **Hydroxypyridinone derivatives: A low-pH alternative to polyaminocarboxylates for TALSPEAK-like separation of trivalent actinides from lanthanides**

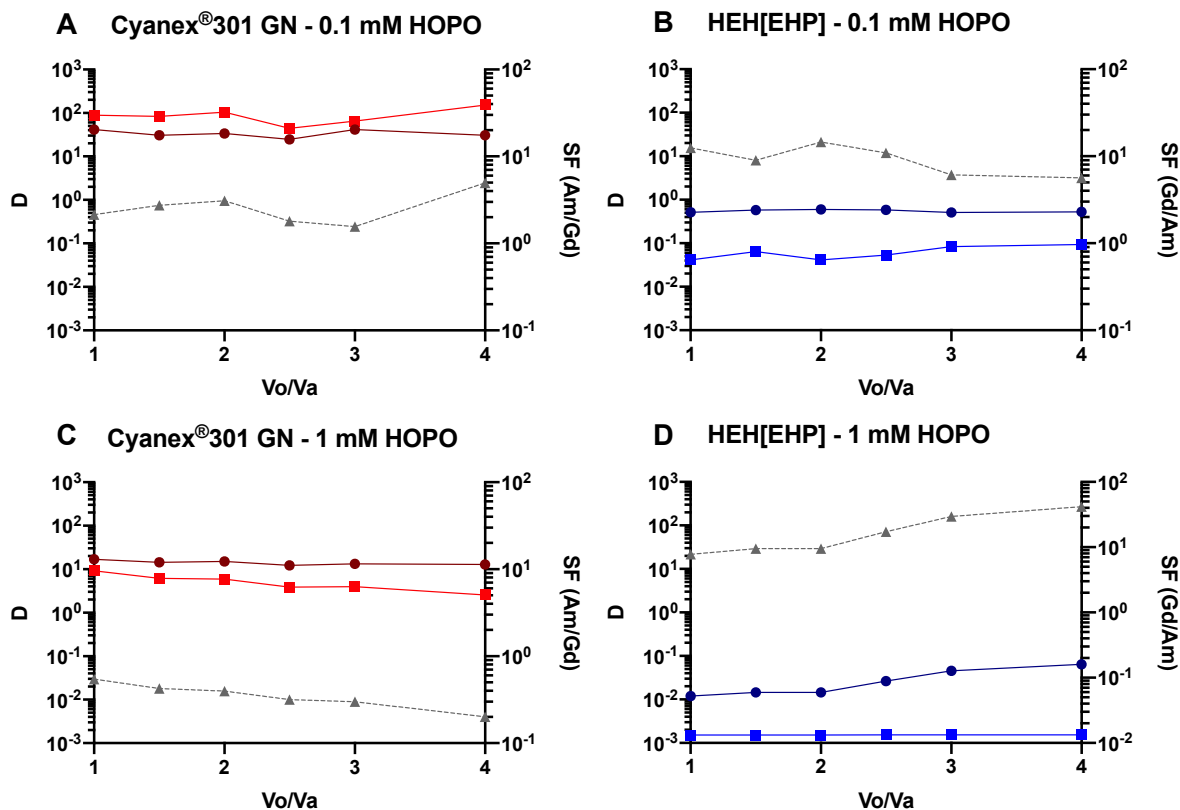
Yufei Wang<sup>†,‡,§</sup>, Gauthier J.-P. Deblonde<sup>‡,§,⊥</sup>, Rebecca J. Abergel<sup>†,‡,\*</sup>

<sup>†</sup> *Department of Nuclear Engineering, University of California, Berkeley, CA 94720, USA.*

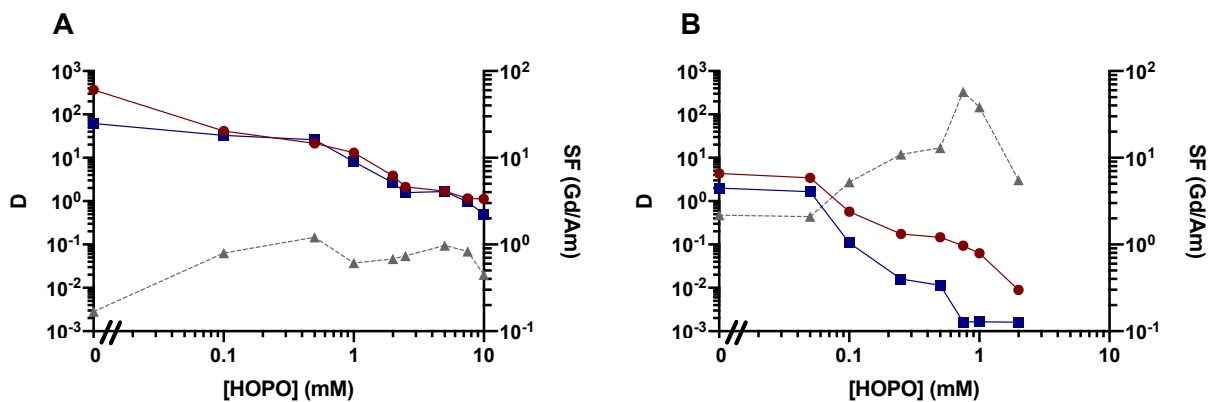
<sup>‡</sup> *Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA.*

**Present Address:** <sup>⊥</sup>Glenn T. Seaborg Institute, Physical and Life Sciences, Lawrence Livermore National Laboratory, Livermore, California 94550, USA.

## **Supporting Information**



**Figure S1.** Distribution ratio for Gd<sup>3+</sup> (round solid line) and Am<sup>3+</sup> (square solid line) and corresponding separation factors (triangle dashed line) as a function of phase volume ratio, with two different HOPO concentrations - 0.1 mM in Panels A and B or 1 mM in Panels C and D - and two different extractants: Cyanex<sup>®</sup>301 GN (Panels A and C) or HEH[EHP] (Panels B and D). [Extractant] = 0.5 M in kerosene; pH = 1.50 ± 0.02; I = 1 M.



**Figure S2.** Influence of the HOPO concentration in the aqueous phase distribution ratios of Gd<sup>3+</sup> (round solid line) and Am<sup>3+</sup> (square solid line) after Cyanex<sup>®</sup>301 GN (Panel A) or HEH[EHP] (Panel B) extraction, and corresponding separation factors (triangle dashed line). [Extractant] = 0.5 M in kerosene; V<sub>o</sub>/V<sub>a</sub> = 3; pH = 1.50 ± 0.02; I = 1 M.