J. Braz. Chem. Soc., Vol. 21, No. 7, S1-S3, 2010.
Printed in Brazil - ©2010 Sociedade Brasileira de Química
0103 - 5053 $6.00+0.00

Catalytic Promiscuity: Catecholase-like Activity and Hydrolytic DNA Cleavage Promoted by a Mixed-Valence $Fe^{III}Fe^{II}$ Complex

Ademir Neves,*[a] Adailton J. Bortoluzzi,[a] Rafael Jovito,[a] Rosely A. Peralta,[a] Bernardo de Souza,[a] Bruno Szpoganicz,[a] Antônio C. Joussef,[a] Hernán Terenzi,[b] Patricia C. Severino,[b] Franciele L. Fischer,[b] Gerhard Schenk,[c] Mark J. Riley,[c] Sarah J. Smith[c] and Lawrence R. Gahan[c]

[a]LABINC, Departamento de Química and [b]Centro de Biologia Molecular Estrutural, Departamento de Bioquímica, Universidade Federal de Santa Catarina, 88040-900 Florianópolis - SC, Brazil

[c]School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane 4072, Australia

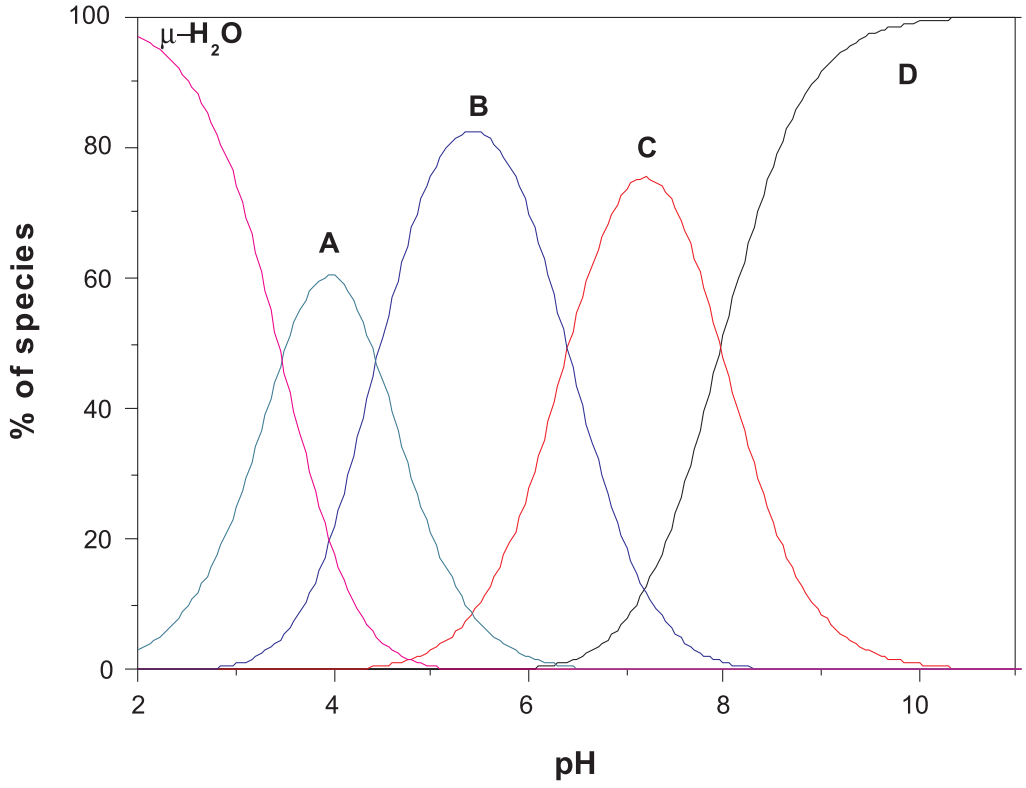

Figure S1. Species diagram for the spectrophotometric titration of complex $[Fe^{III}(bpbpmp)(\mu\text{-}OAc)_2Fe^{II}]^+$ in $CH_3CN:H_2O$ 1:1. $\mu\text{-}H_2O$: $[(OH_2)Fe^{III}(OH_2)Fe^{II}(OH_2)]$; A: $[(OH_2)Fe^{III}(\mu\text{-}OH)Fe^{II}(OH_2)]$; B: $[(OH)Fe^{III}(\mu\text{-}OH)Fe^{II}(OH_2)]$; C: $[(OH)Fe^{III}(\mu\text{-}O)Fe^{II}(OH_2)]$; D: $[(OH)Fe^{III}(\mu\text{-}O)Fe^{II}(OH)]$.

This paper is dedicated to our friend Professor Icaro Moreira *in memoriam*

*e-mail: ademir@qmc.ufsc.br

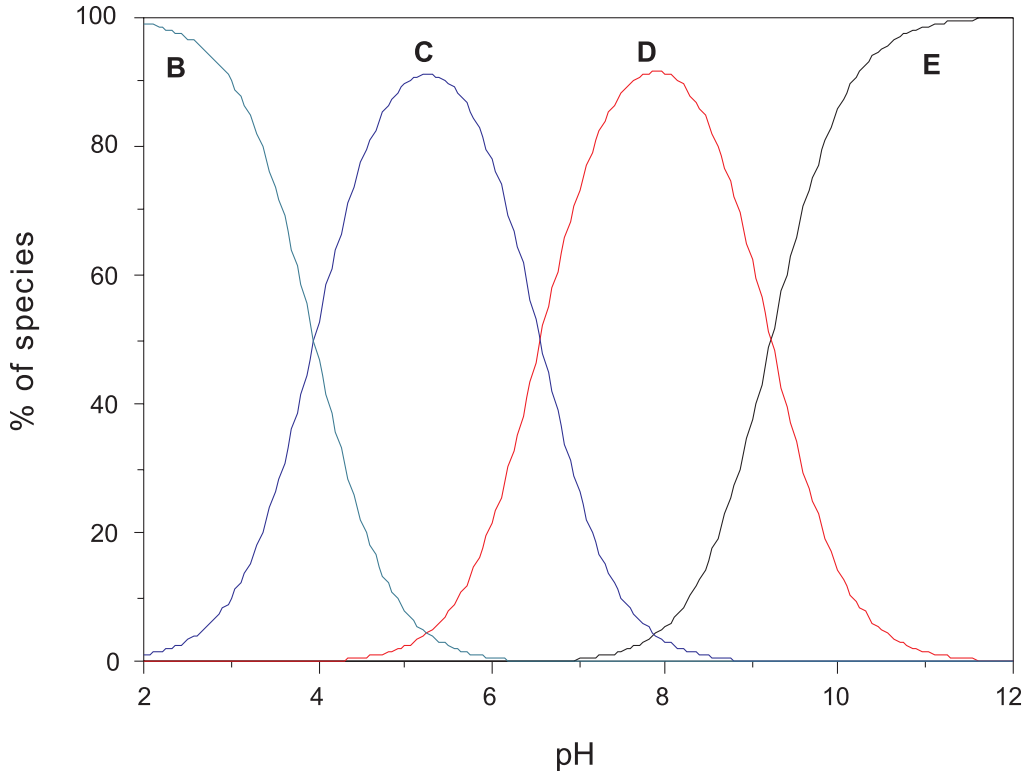

Figure S2. Species diagram for the spectrophotometric titration of complex $[Fe^{III}(bpbpmp)(\mu\text{-}OAc)_2Fe^{III}]^{2+}$ in $CH_3CN{:}H_2O$ 1:1. B: $[(OH)Fe^{III}(\mu\text{-}OH)Fe^{III}(OH_2)]$; C: $[(OH)Fe^{III}(\mu\text{-}O)Fe^{III}(OH_2)]$; D: $[(OH)Fe^{III}(\mu\text{-}O)Fe^{III}(OH)]$; E: $[(OH)Fe^{III}(\mu\text{-}O)Fe^{II}(OH)_2]$.

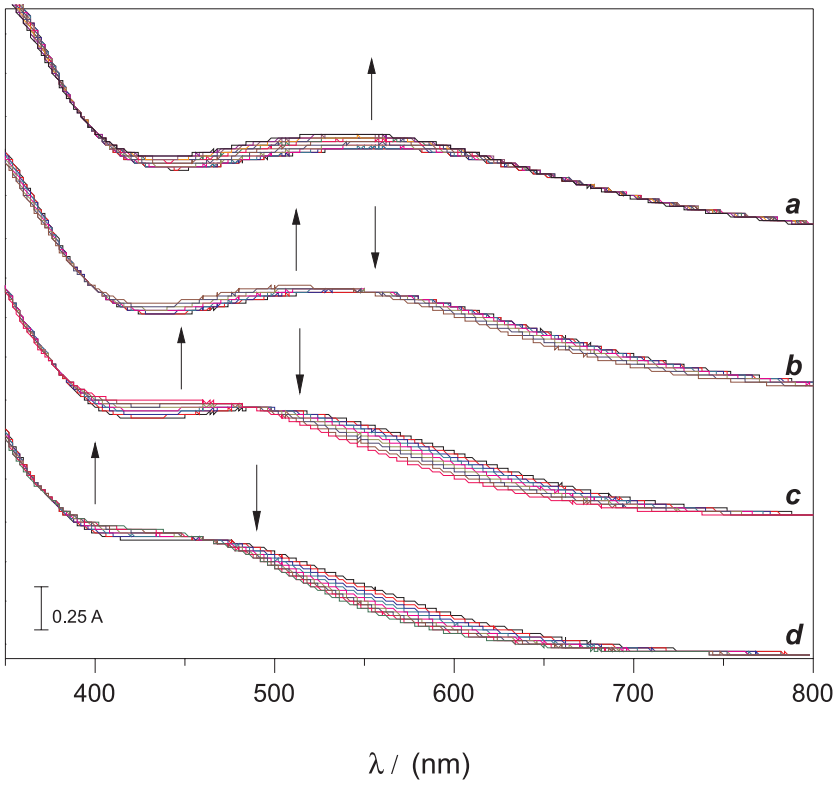

Figure S3. Spectral changes of the complex $[Fe^{III}(bpbpmp)(\mu\text{-}OAc)_2Fe^{III}]^{2+}$ during titration. The spectra were recorded on $CH_3CN{:}H_2O$ 1:1 at successive pH. [complex] = 3×10^{-4} mol L^{-1}. pH range ***a***: 2.4-3.7; ***b***: 3.6-4.7; ***c***: 5.5-8.1; ***d***: 8.1-10.9.

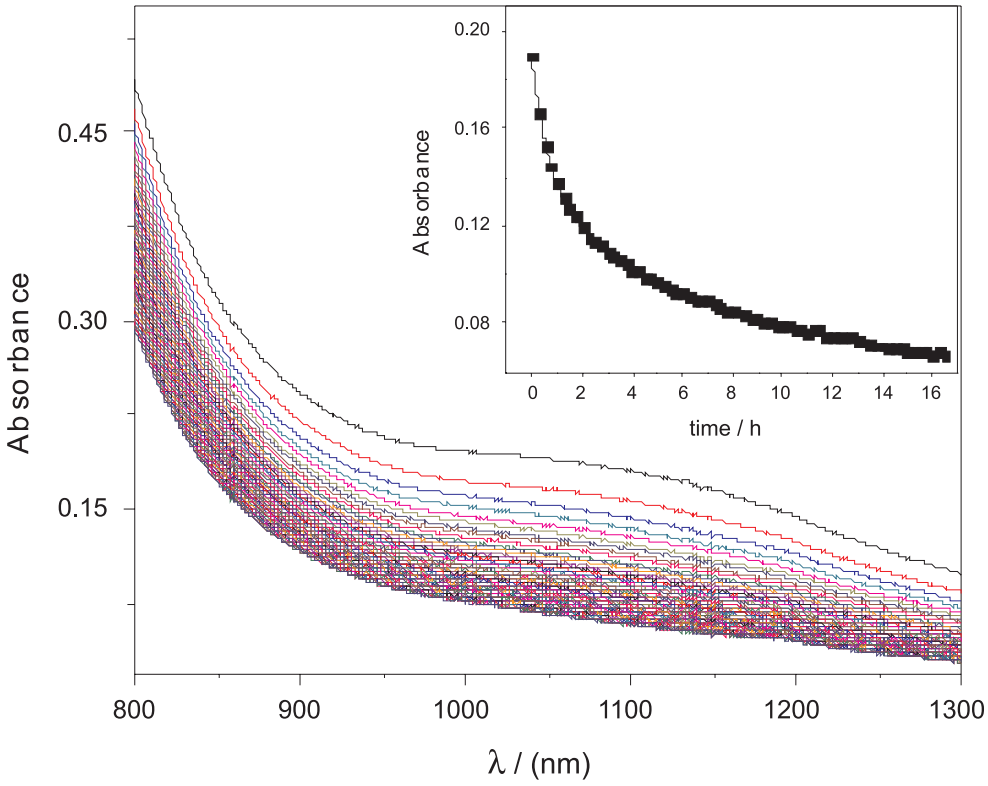

Figure S4. Spectral change of the intervalence band for the mixed-valence complex $[Fe^{III}(bpbpmp)(\mu\text{-}OAc)_2Fe^{II}]^+$ over time under kinetic conditions: 3:2 CH_3OH:H_2O at pH 7.0. [complex] = 4×10^{-3} mol L^{-1}, [buffer] = 0.1 mol L^{-1}. Inset: Decay of the absorbance at 1050 nm during 16 h.