

置換基の導入によるらせん型Co(II)錯体のキロプロティカル特性のリモート制御

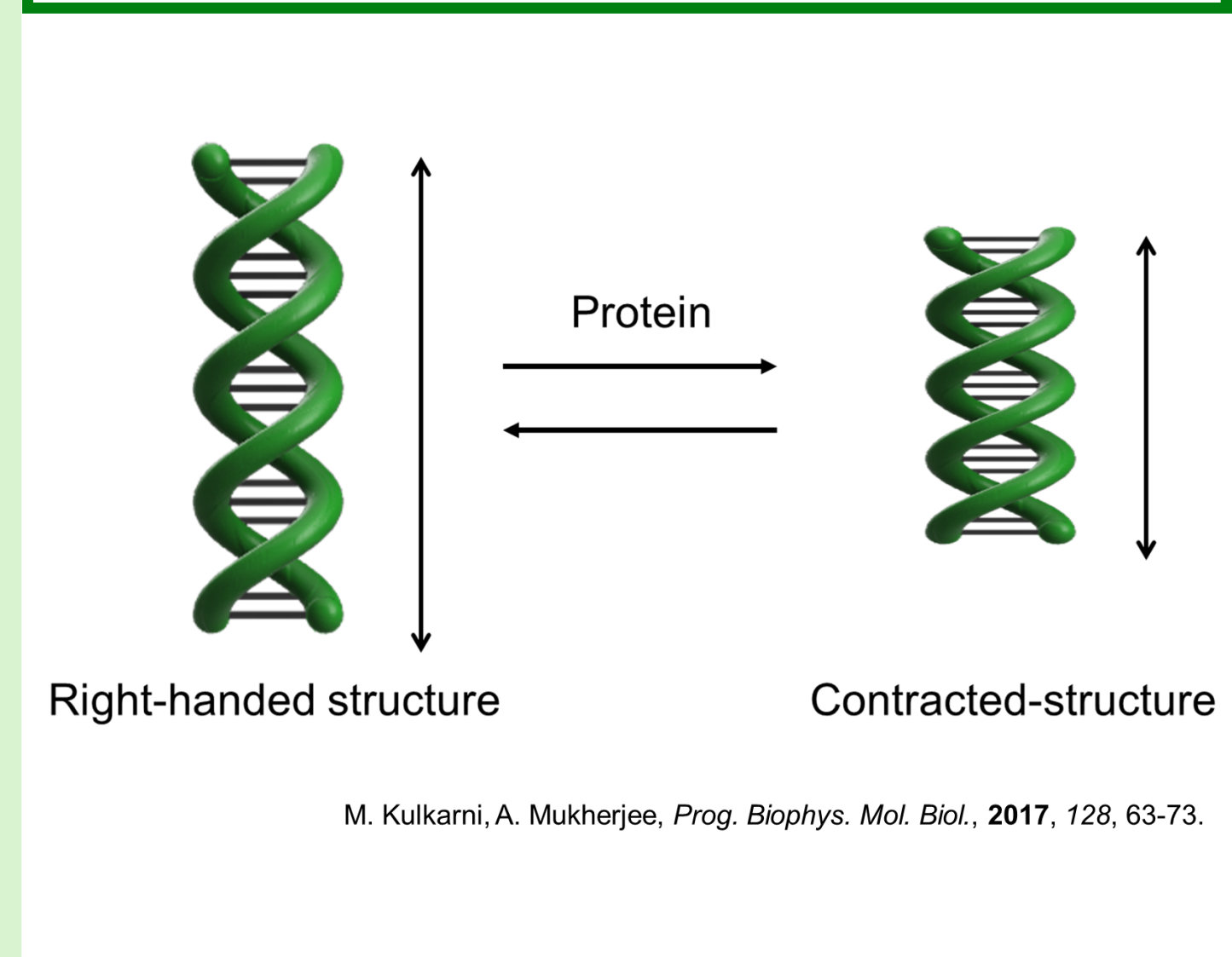
Remote Control of Chiroptical Properties in Helical Co(II) Complexes by Introduction of Substituents

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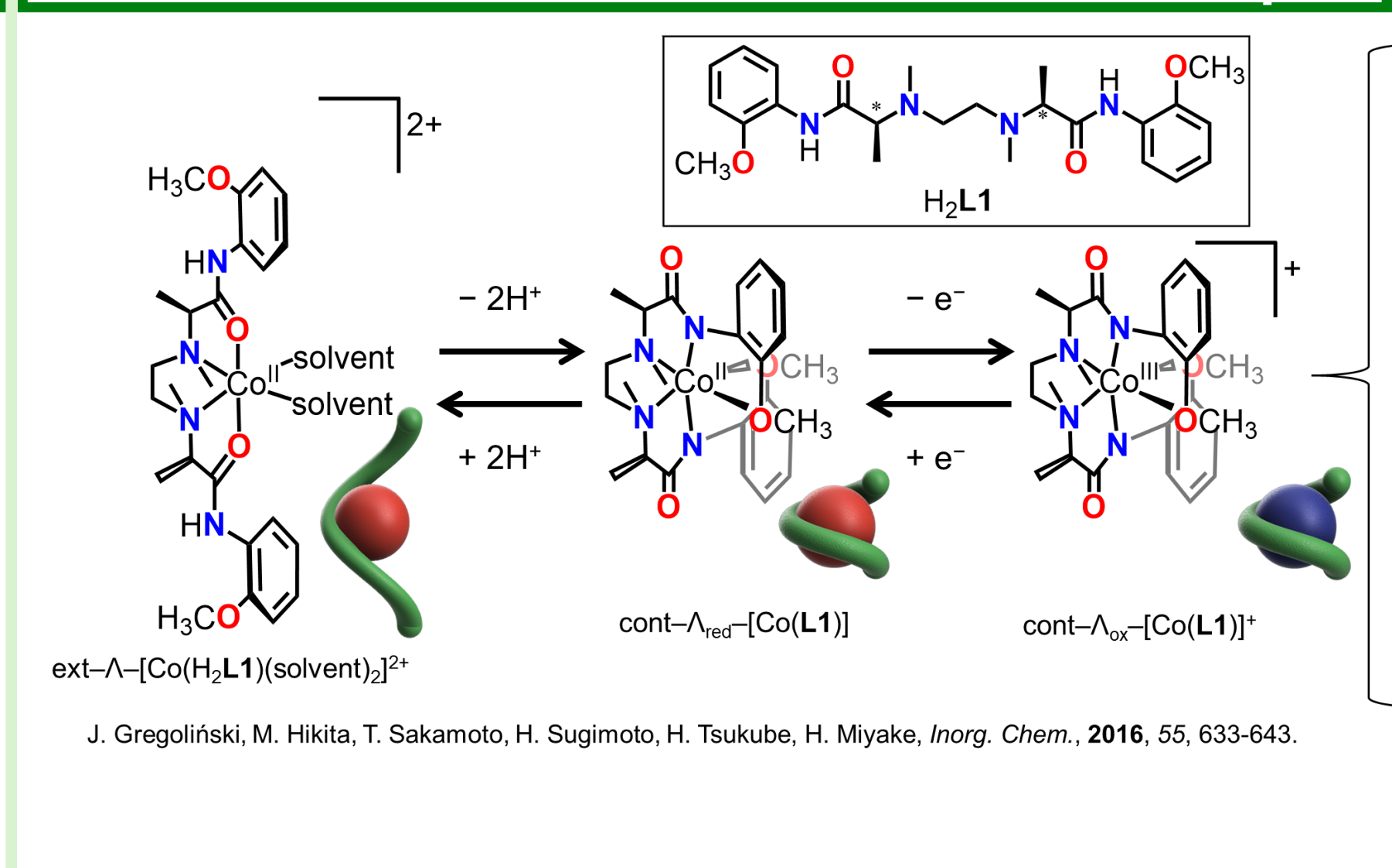
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~Introduction~

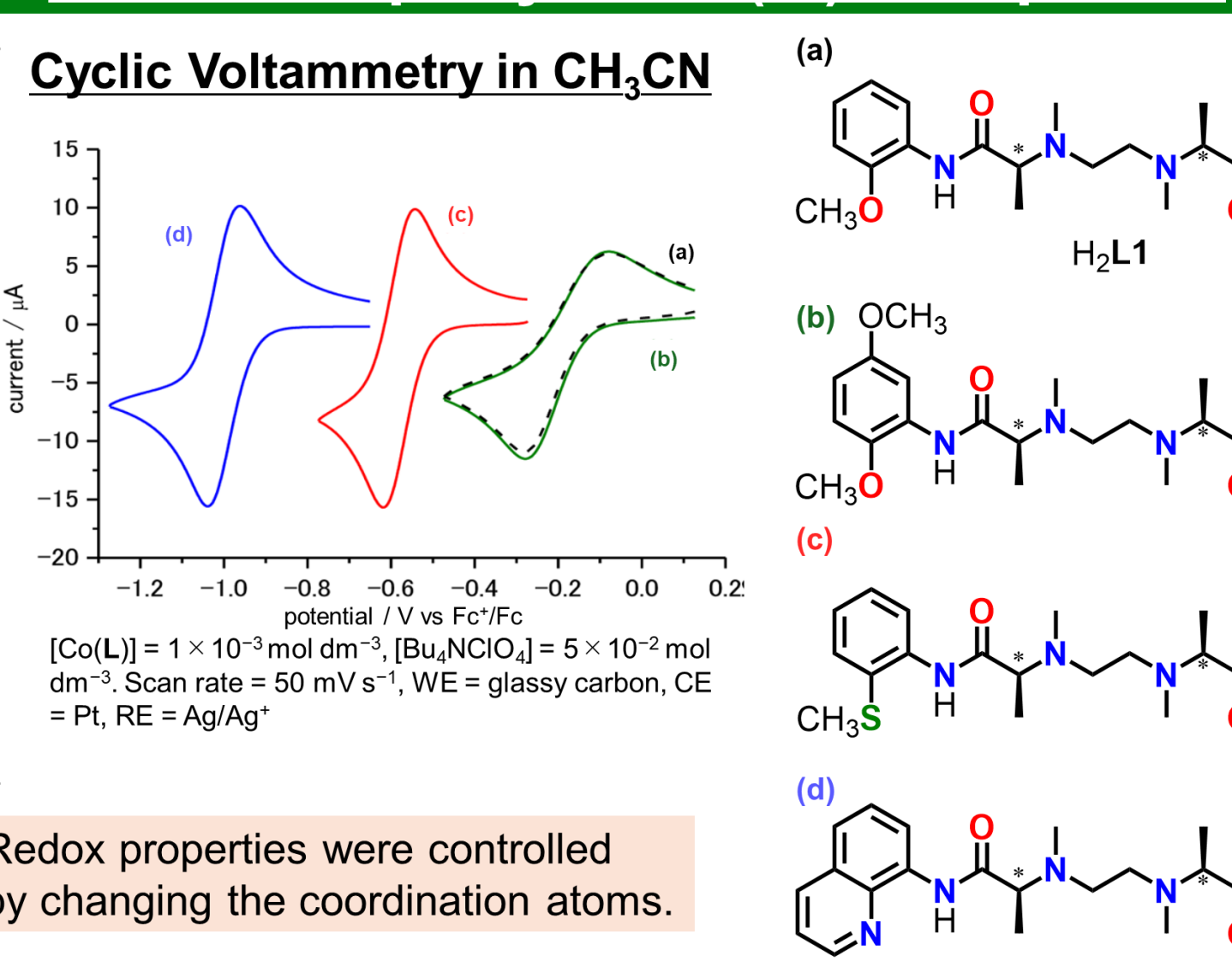
Structural Conversion of Helical DNA



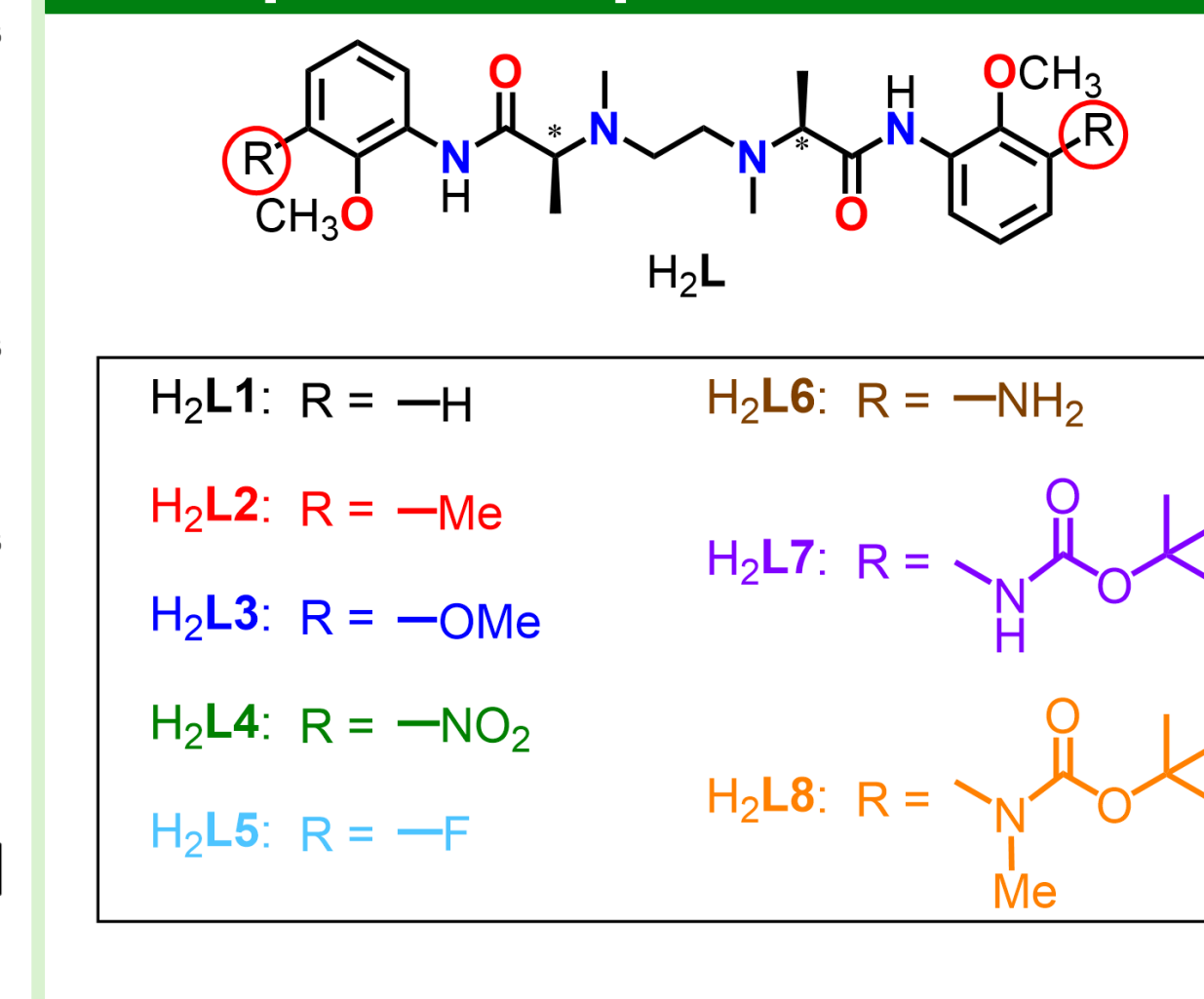
Structural Conversion of Chiral Metal Complex



Redox Property of Co(III) Complexes



This Work; Remote Control of Chiroptical Properties



~Methods~

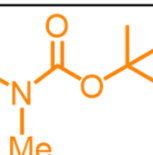
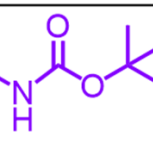
Assessment of Substituent Effects

H_2L

Hammett Parameter σ_m

Electron-donating $\leftarrow$

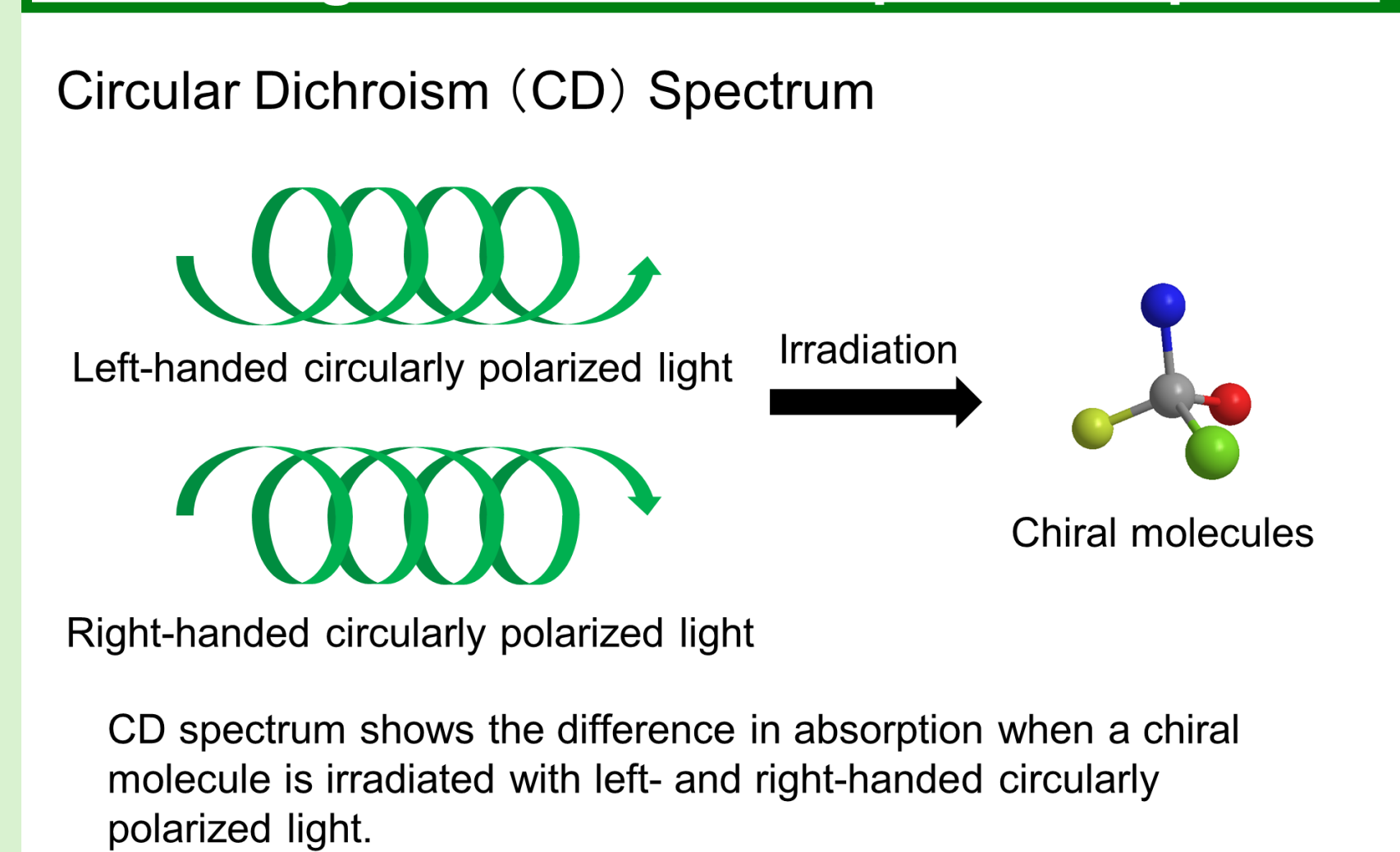
$\rightarrow$ Electron-withdrawing

R =								
σ_m	-0.16	-0.07	0.00	0.12	0.14*	0.18*	0.34	0.71

C. Hansch, A. Leo, R. W. Taft, *Chem. Rev.*, **1991**, 91, 165-195.

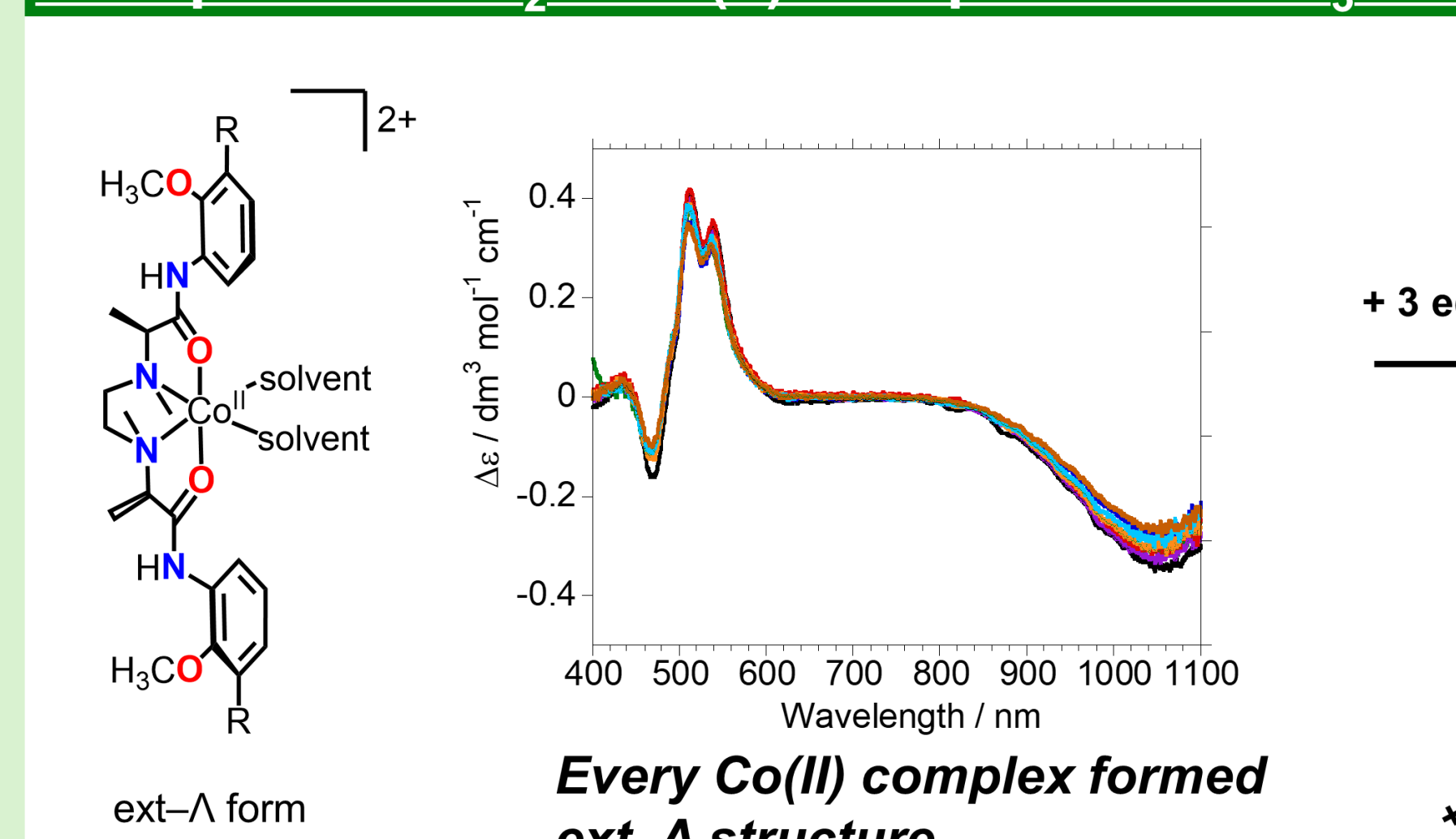
*: σ_m was calculated using the web tool for calculating substituent descriptors.
(P. Ertl, *Chemistry-Methods* **2022**, 2, e20220041.)

Measuring Method of Chiroptical Properties

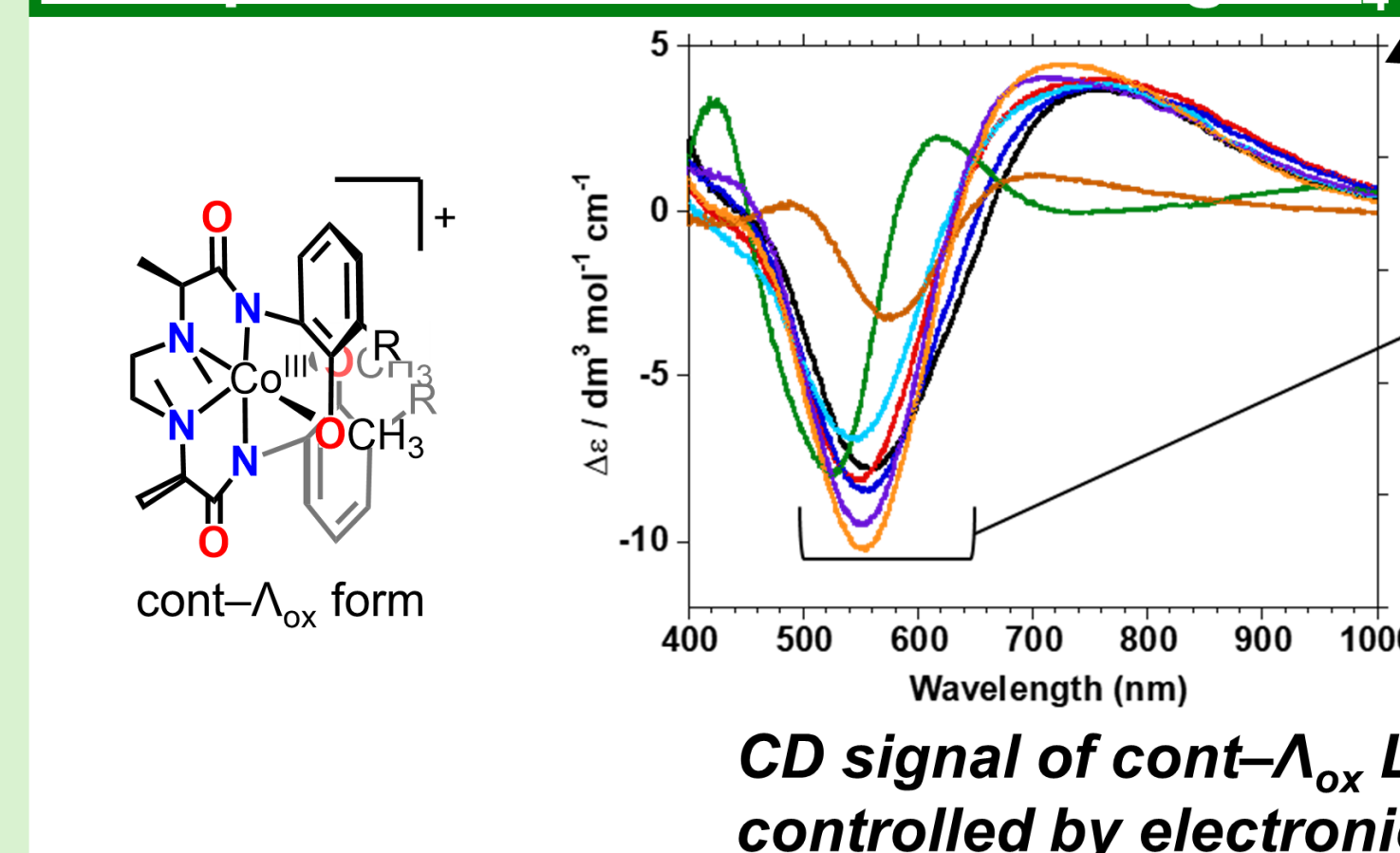


~Results and Discussion~

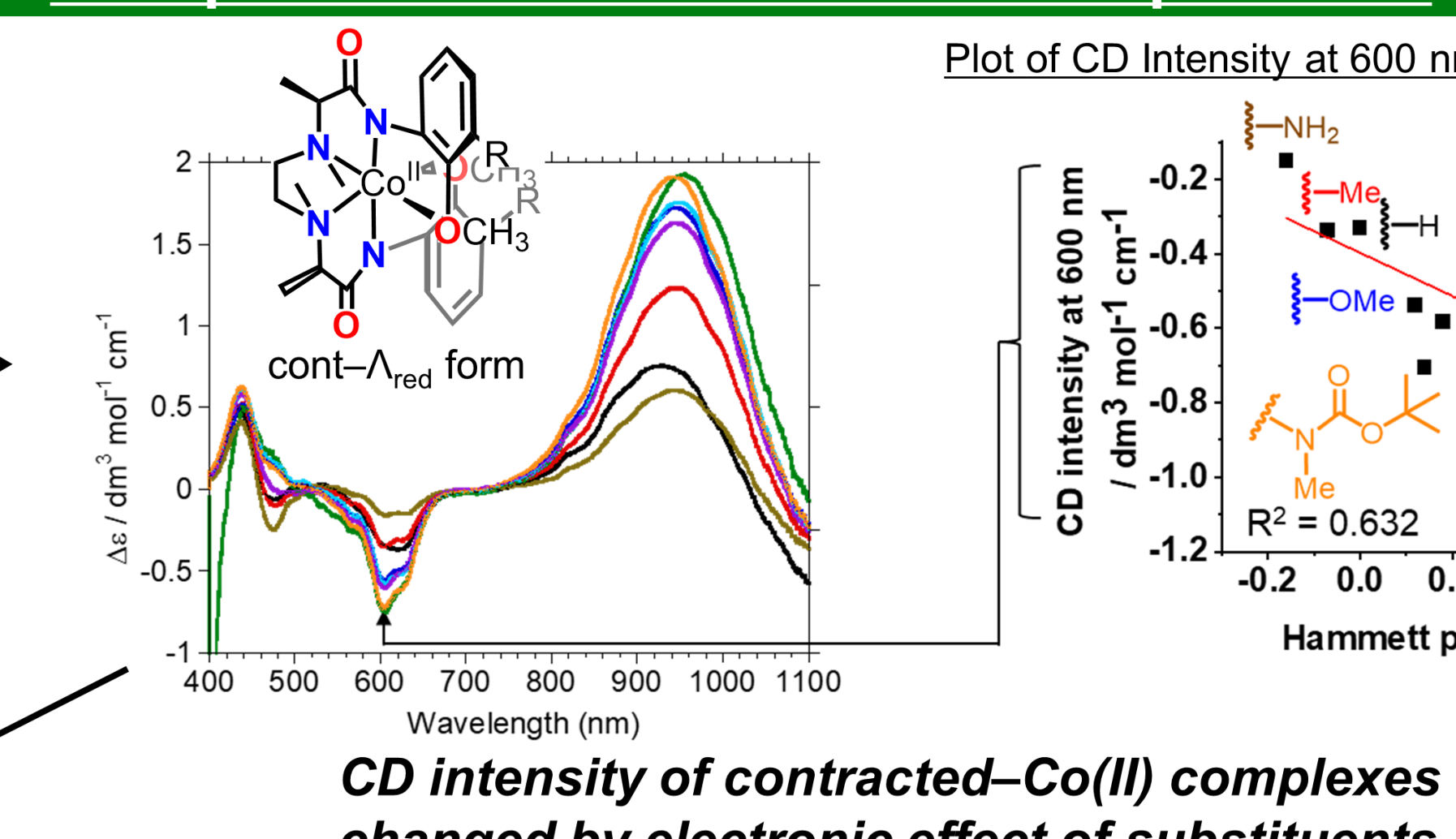
CD Spectra of H₂L-Co(II) Complexes in CH₃CN



CD Spectra in the Presence of AgClO₄



CD Spectra in the Presence of 3.0 eq. of Base



Summary

- Structure of every Co(II) complex was extended- Λ form (ext- Λ).
- For contracted Co complexes, chiroptical properties were controlled by substituents.

