Supporting Information for

Enantioselective carbon stable isotope fractionation of hexachlorocyclohexane during aerobic biodegradation by *Sphingobium* spp.

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Figure page

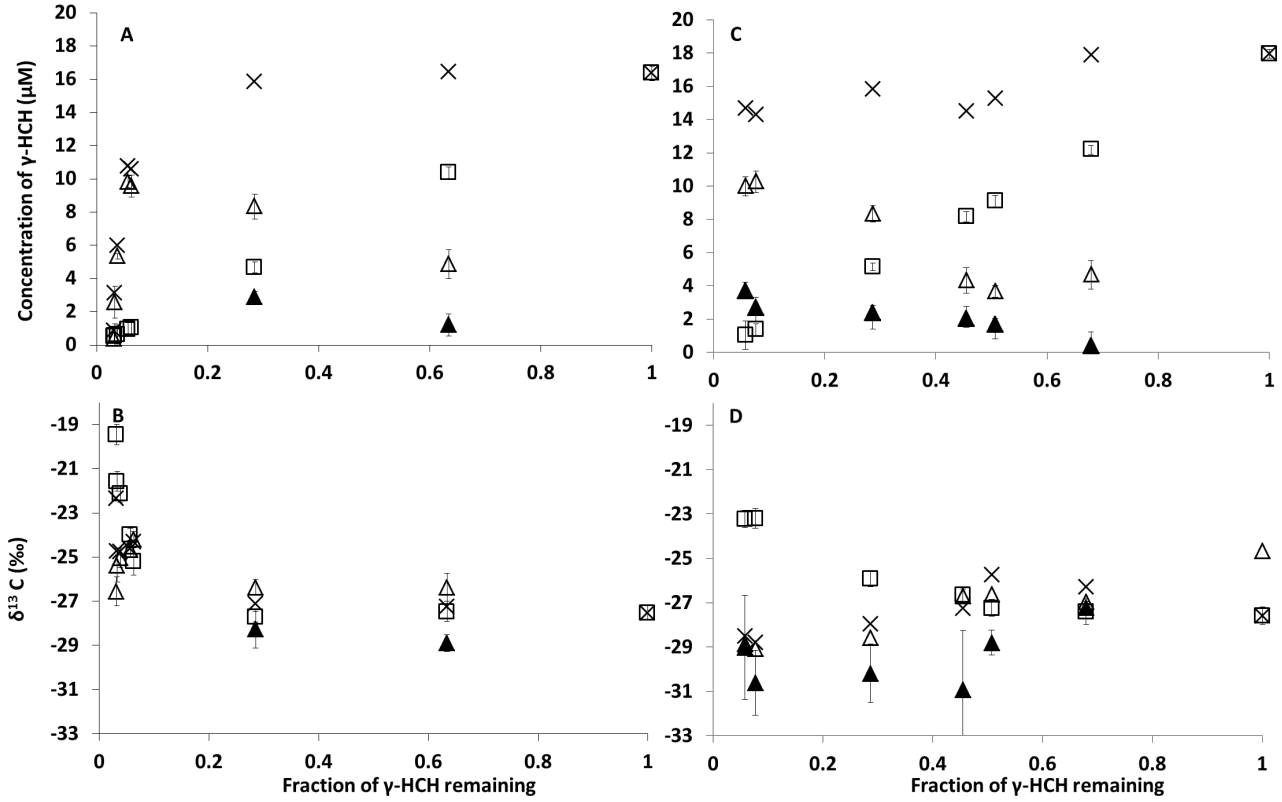

Figure S1. Biodegradation of γ-HCH by *S. indicum* strain B90A and *S. japonicum* strain UT26: Concentrations and carbon isotope ratios of γ-HCH and its metabolites.

Concentrations (A) and carbon isotope ratios (B) of γ-HCH and products during biodegradation by *S. indicum* strain B90A. γ-HCH (open square) and its metabolites 1,2,4-TCB (open triangle) and γ-pentachlorocyclohexene (γ-PCCH) (close triangle). Concentrations (C) and carbon isotope ratios (D) of γ-HCH and products during biodegradation by *S. japonicum* strain UT26. γ-HCH (open square) and its metabolites 1,2,4-TCB (open triangle) and 2,5-dichlorophenol (2,5-DCP) (close triangle). The sum concentration (A,C) and average carbon isotope composition (B, D) of substrate and products (see Materials and Methods for calculation) are indicated by X. Error bars indicate the standard deviation of triplicate analysis for carbon isotope analysis.

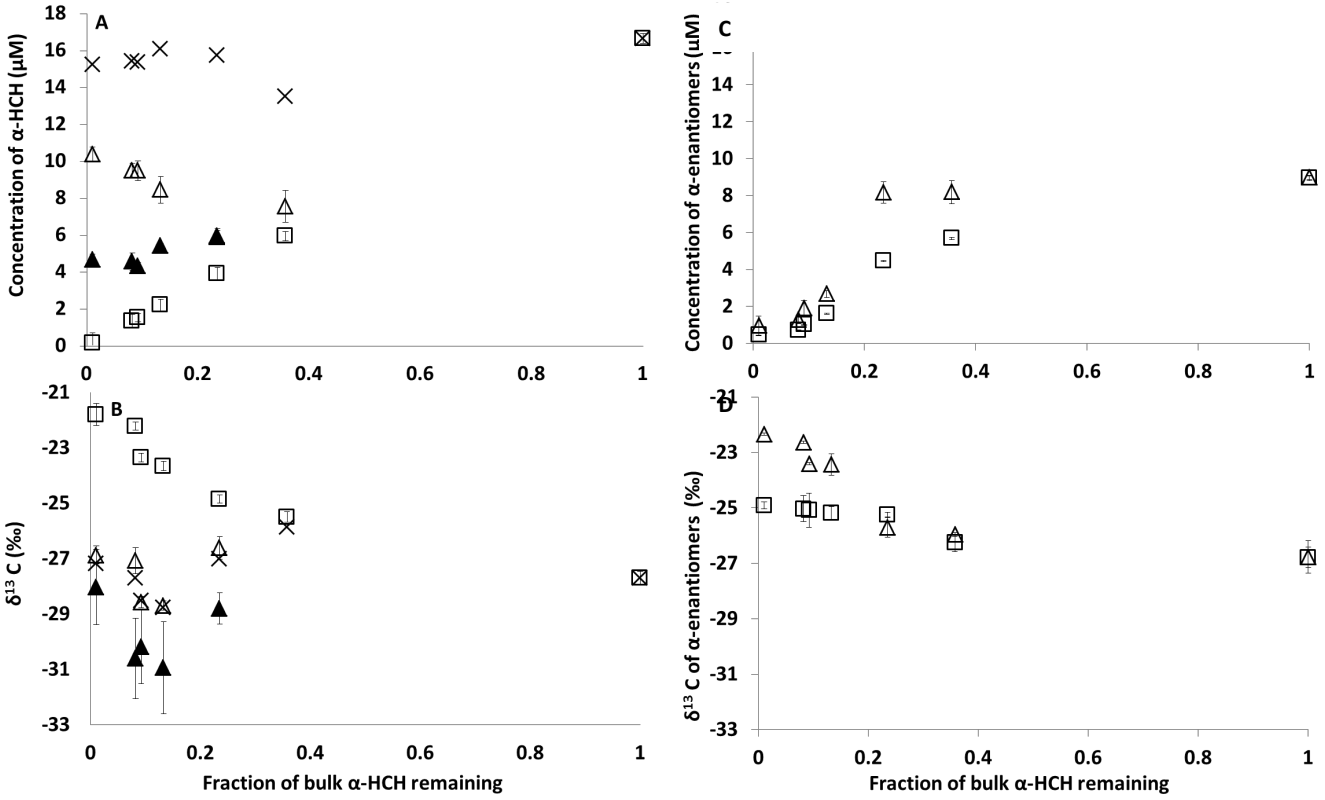

Figure S2. Biodegradation of α-HCH by *S. japonicum* strain UT26: Concentrations and carbon isotope ratios of α-HCH, its enantiomers and metabolites.

Concentrations (A) and carbon isotope ratios (B) of α-HCH and metabolites during biodegradation by *S. japonicum* strain UT26. α-HCH (open square) and metabolites 1,2,4-TCB (open triangle) and 2,5-dichlorophenol (2,5-DCP) (close triangle). Changes in concentrations (C) and carbon isotope ratios (D) of (-) α-HCH (open square) and (+) α-HCH (open triangle) during biodegradation by *S. japonicum* strain UT26. The sum concentration (A) and average carbon isotope composition (B) of substrate and products are indicated by X. Error bars indicate the standard deviation of triplicate analysis for carbon isotope analysis.

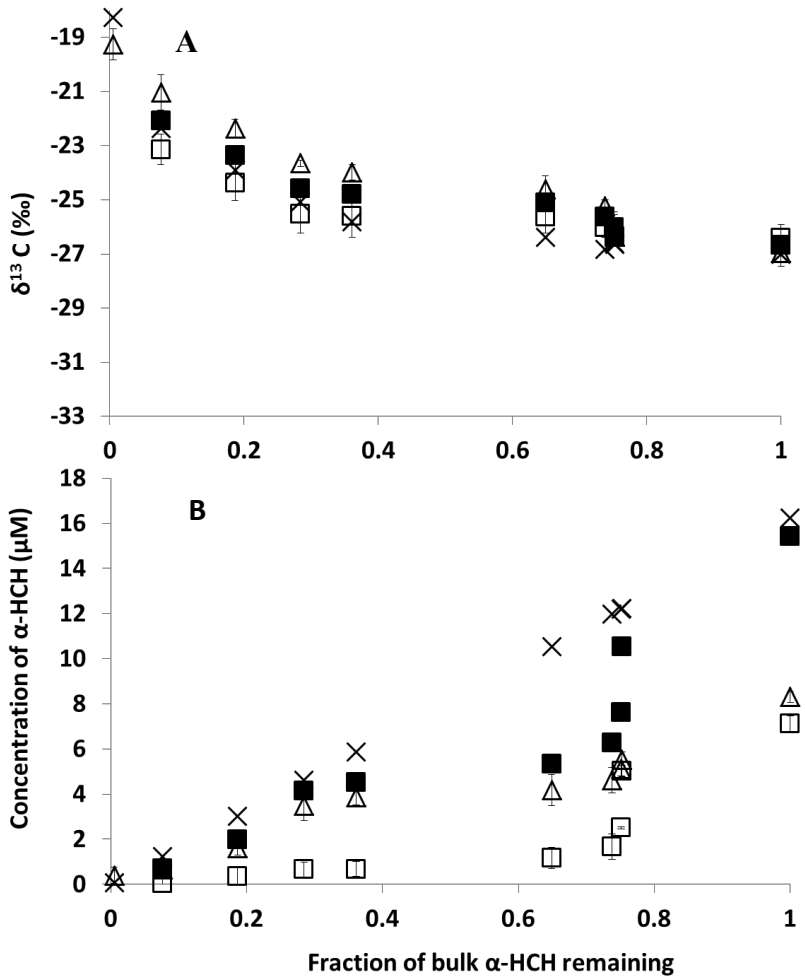

Figure S3. Comparison of average concentrations (A) and average carbon isotope composition (B) of α-HCH and its enantiomers during biodegradation by *S. indicum* strain B90A.

Bulk α-HCH directly analyzed (cross) and bulk α-HCH calculated by using (+) α-HCH and (-) α-HCH enantiomer concentrations and carbon isotope ratios (closed squares). (-) α-HCH (open square) and (+) α-HCH (open triangle).