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Co(III) catalysed asymmetric ring-opening of epichlorohydrin by salicylaldehyde derivatives: reversal of enantioselectivity and rate acceleration on addition of $AlCl_3$

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Keywords
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Abstract: Using asymmetric Cobalt(III) salen catalysts, the ring-opening of epichlorohydrin by 2,3-dihydroxybenzal- dehyde and 2,4- dihydroxybenzaldehyde was found to occur at the phenolic groups most distant from the aldehydic group. Switching catalysts afforded a reversal in enantioselectivity. For 2,3-dihydroxybenzaldehyde and salicylaldehyde, addition of $AlCl_3$ to the reaction mixture led to an increase in reaction rate without any decrease in product enantiopurity.

Key Words: Asymmetric catalysis; salicylaldehyde; Co(III) salen; aryloxy alcohols; epoxide ring-opening

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