Jonathan Clayden — Publications

260. A tendril perversion in a helical oligomer: trapping and characterizing a mobile screw-sense reversal

259. Ligand-modulated conformational switching in a fully synthetic membrane-bound receptor

258. Vinylation intramolécuulaire de carbanions nucléophiles par les N-acylbenzomorpholines comme vinylurées et vinylcarbamates masques / Intramolecular Vinylation of Carbanions Using N-Acyl Benzomorpholines as Masked Viny lureas and Vinylcarbamates
Brian P. Corbet, Johnathan V. Matlock, Josep Mas Roselló and Jonathan Clayden, Comptes Rendus Chimie, in press.

257. Stereospecific Intramolecular Arylation of 2- and 3-Pyridyl Substituted Alkylamines via Configurationally Stable α-Pyridyl Organolithiums

256. Biocatalytic Dynamic Kinetic Resolution for the Synthesis of Atropisomeric Biaryl N-Oxide Lewis Base Catalysts

255. Medium Ring Nitrogen Heterocycles by Migratory Ring Expansion of Metallated Ureas

254. Helical foldamers incorporating photoswitchable residues for light-mediated modulation of conformational preference

253. The meso helix: symmetry and symmetry-breaking in dynamic oligouraea foldamers with reversible hydrogen-bond polarity

252. No turning back for motorized molecules

251. Dynamic Foldamer Chemistry

250. Conformational photoswitching of a synthetic peptide foldamer bound within a phospholipid bilayer

249. Substituent effects on axial chirality in 1-aryl-3,4-dihydroisoquinolines: controlling the rate of bond rotation
Josep Mas Roselló, Samantha Staniland, Nicholas J. Turner and Jonathan Clayden, Tetrahedron in press (Symposium in print 'Control of Axial Chirality')

248. Length-dependent formation of transmembrane pores by 310 helical Aib foldamers

247. Refoldable foldamers: global conformational switching by deletion or insertion of a single hydrogen bond

‡ This symbol indicates a non peer reviewed contribution (19 in this list)
246. Origin of Helical Screw Sense Selectivity Induced by Chiral Constrained Cα-Tetrasubstituted α-Amino Acids in Aib-based Peptides

245. α-Quaternary proline derivatives by intramolecular diastereoselective arylation of N-carboxamido proline ester Enolates
Julien Maury and Jonathan Clayden J. Org. Chem. 2015, 80, 10757-10768

244. Helical peptaibol mimics are better ionophores when racemic than when enantiopure

243. Palladium-catalysed C-arylation of amino acid derived hydantoins
Fernando Fernández-Nieto, Josep Mas Roselló, Simone Lenoir, Simon Hardy and Jonathan Clayden Org. Lett. 2015, 17, 3838-3841.

242. Conformational cooperativity between helical domains of differing geometry in oligoamide-oligourea foldamer chimeras

241. Pseudoephedrine-directed asymmetric α-arylation of α-amino acid derivatives

240. Conformational switching of a foldamer in a multi-component system by pH-filtered selection between competing non-covalent interactions

239. Screw sense alone can govern enantioselective extension of a helical peptide by kinetic resolution of a racemic amino acid
Liam Byrne, Jordi Solà and Jonathan Clayden Chem. Commun. 2015, 51, 10965-10968.

238. Geometry-selective synthesis of the unsaturated side chains of the isodomoic acids
Nadia Fleary-Roberts, Gilles Lemière and Jonathan Clayden, Tetrahedron, 2015, 71, 7204-7208 (Alan R. Katritzky memorial issue)

237. 2,2- and 2,6-Diarylpyperidines by Aryl Migration within Lithiated Urea Derivatives of Tetrahydropyridines
Michael B. Tait, Sam Butterworth, and Jonathan Clayden Org. Lett. 2015, 17, 1236-1239.

236. Flaws in foldamers: conformational uniformity and signal decay in achiral helical peptide oligomers

235. Directed lithiation of pentadienylsilanes

234. Recent Developments in Inter- and Intra-molecular Enolate Arylation

233. Enantioselective carbollithiation of S-alkenyl-N-aryl thiocarbamates: kinetic and thermodynamic control

232. Lithium choreography determines contrasting stereochemical outcomes of aryl migrations in benzylic carbamates, ureas and thiocarbamates
Publications


229. Inducing achiral aliphatic oligoureas to fold into helical conformations

228. Designing Foldamer-Foldamer Interactions in Solution: The Roles of Helix Length and Terminus Functionality in Promoting the Self-Association of Aminoisobutyric Acid Oligomers

227. Enzymatic desymmetrising redox reactions for the asymmetric synthesis of biaryl atropisomers

226. The synthesis of 1-arylcycloalkenamines by intramolecular arylation of lithiated ureas

225. Atropisomerism about Aryl–Csp³ Bonds: The Electronic and Steric Influence of ortho-Substituents on Conformational Exchange in Cannabidiol and Linderatum Derivatives

224. Controlling the sign and magnitude of screw-sense preference from the C-terminus of an achiral helical foldamer

223. Dihydrothiophenes containing quaternary stereogenic centres by sequential stereospecific rearrangements and ring-closing metathesis

222. Engineering the structure of an N-terminal β-turn to maximize screw-sense preference in achiral helical peptide chains

221. Conformational Analysis of Helical Aminoisobutyric Acid (Aib) Oligomers Bearing C-Terminal Schellman Motifs

220. Comprehensive Organic Synthesis II, vol. 8 (Reduction)

219. Dearomatization and aryl migration in organolithium chemistry

218. Tertiary thiols from allylic thiocarbamates by tandem enantioselective [3,3]-sigmatropic rearrangement and stereospecific arylation

217. Diastereomeric Ratio Determination by High Sensitivity Band-Selective Pure Shift NMR Spectroscopy
216. Thionoglycine as a multifunctional spectroscopic reporter of screw-sense preference in helical foldamers

215. Foldamer-mediated remote stereocontrol: >1.60 asymmetric induction

214. Intramolecular arylation of amino acid enolates

213. Carbolithiation of glycine and its derivatives

212. Structural influences in lithium pentadienylsilane complexes
Ugo Orcel, Matteo De Poli, Marta De Zotti and Jonathan Clayden, Beilstein J. Org. Chem. 2013, 9, 3168-3176.

211. Influence of achiral units with gem-dimethyl substituents on the helical character of aliphatic oligoureas

210. Dearomatising cyclisation of lithiated alkyl phenyl ethers: the role of an oxazoline substituent

209. Manipulating the diastereoselectivity of ortholithiation in planar chiral ferrocenes

208. Influence of achiral units with gem-dimethyl substituents on the helical character of aliphatic oligoureas

207. Carbolithiation of S-alkenyl-N-aryl thiocarbamates: carbanion arylation in a connective route to tertiary thiols

206. Diastereotopic fluorine substituents as 19F NMR probes of screw-sense preference in helical foldamers

205. Spriocyclic dihydroxyamides by electrophile-induced dearomatizing cyclization of N-alkenyl pyridinycarboxamides

204. Carbolithiation of S-alkenyl ureas and N-alkenyl carbamates

203. Left-handed helical preference in an achiral peptide chain is induced by an L-amino acid in an N-terminal Type II β-turn

202. Reversible aryl migrations in metallated ureas: controlled inversion of configuration at a quaternary carbon atom

201. Amines bearing tertiary substituents by tandem enantioselective carbolithiation–rearrangement of vinyl ureas
199. Lithium choreography: intramolecular arylations of carbamate-stabilised carbanions and their mechanisms probed by in-situ IR and DFT

198. S-Allyl thiocarbamates from allylic alcohols by in situ [3,3]-sigmatropic rearrangement of a thiocarbonyldiimidazole adduct

197. Lithiated tertiary carbanions display variable coordination modes: the evidence from DFT and NMR studies

196. §Organic Chemistry (Second Edition)

195. Intramolecular vinylation of secondary and tertiary organolithiums

194. Chemical communication: conductors and insulators of screw-sense preference between helical oligo(aminoisobutyric acid) domains

193. §Stabilizers cause instability (News and Views article)

192. Induction of unexpected left-handed helicity by an N-terminal L-amino acid in an otherwise achiral peptide chain

191. Tertiary alcohols by tandem β-carbolithiation and N→C aryl migration in enol carbamates

190. On the control of secondary carbanion structure utilizing ligand effects during directed metalation

189. The Mechanism of the Stereospecific Intramolecular Arylation of Lithiated Ureas: The Role of Li⁺ probed by electronic structure calculations, and by NMR and IR spectroscopy

188. Is nevirapine atropisomeric? Experimental and computational evidence for rapid conformational inversion

187. The Urea Renaissance

186. §Deearomatizing reactions using organolithiums
Gilles Lemière and Jonathan Clayden, Science of Synthesis, Knowledge Updates 2011, 4, 139-190.

185. §Communicating chirality (News and Views article)

184. Carbamate-directed benzylic lithiation for the diastereo- and enantioselective synthesis of diaryl ether atropisomers
183. Synthesis of enantiomerically enriched (R)-13C-labelled 2-aminoisobutyric acid (Aib) by conformational memory in the alkylation of a derivative of L-alanine

182. Ligand effects in the formation of tertiary carbanions from substituted tertiary aromatic amides

181. Attack on fluorinated 2-aryloxazolines by organolithiums: dearomatisation, lithiation or substitution

180. Asymmetric synthesis of tertiary thiols and thioethers

179. Measuring screw-sense preference in a helical oligomer by comparison of 13C NMR signal separation at slow and fast exchange

178. Quaternary centres bearing nitrogen (α-tertiary amines) as products of molecular rearrangements

177. A general synthetic approach to the amnesic shellfish toxins: total synthesis of (–)-isodomoic acid B, (–)-isodomoic acid E and (–)-isodomoic acid F

176. Enantioselective synthesis of tertiary thiols by intramolecular arylation of lithiated thiocarbamates

175. Geometry-selective synthesis of E or Z N-vinyl ureas (N-carbamoyl enamines)

174. Interruption of a 3_{10}-helix by single Gly residue in a poly-Aib motif: a crystallographic study
Jordi Solà, Madeleine Helliwell and Jonathan Clayden, *Biopolymers* 2011, 95, 62-69

173. Sequential double α-arylation of N-allylureas by asymmetric deprotonation and N→C aryl migration

172. The origin of the conformational preference of N,N’-diaryl-N,N’-dimethyl ureas

171. Biocatalytic desymmetrisation of an atropisomer mediated by both an enantioselective oxidase and ketoreductases

170. Nanometre-range communication of stereochemical information by reversible switching of molecular helicity

169. Deconstructing THF [news and views article]

168. Hindered diarylether and diarylsulfone bisphosphine ligands: atropisomerism and palladium complexes
167. Conformational studies of tertiary oligo-m-benzanilides and oligo-p-benzanilides in solution
Laurent Chabaud, Jonathan Clayden, Madeleine Helliwell, Abigail Page, James Raftery and Lluís Vallverdú, Tetrahedron 2010, 66, 6936-6957

166. Tandem β-alkylation–α-arylation of amines by carbolithiation and rearrangement of N-carbamoyl enamines (vinyl ureas)

165. Synthesis of (–)-(S,S)-clemastine by invertive N→C aryl migration in a lithiated carbamate
Anne M. Fournier, Robert A. Brown, William Farnaby, Hideki Miyatake-Ondozabal, and Jonathan Clayden, Org. Lett. 2010, 12, 2222-2225

164. N- vs. C-terminal control over the screw-sense preference of the configurationally achiral, conformationally helical peptide motif Aib₈GlyAib₈

163. Fused bicyclic piperidines and dihydropyridines by dearamatising cyclisation of the enolates of nicotinyl-substituted esters and ketones

162. A one-pot synthesis of 2-aryl-4,5-anti-diphenyl oxazolines
Jonathan Clayden, James Clayton, Rebecca A. Harvey, and Ol’ga Karlibiková, Synlett 2009, 2836-2838.

161. Direct synthesis of sulfonated azacalixarenes in water

160. Synthesis of 2,2′,6-trisubstituted and 2,2′,6,6′-tetrasubstituted diaryl sulfides and diaryl sulfoxides by copper-promoted coupling and / or ortholithiation
Jonathan Clayden and James Senior, Synlett 2009, 2769-2772.

159. The challenge of atropisomerism in drug discovery

158. Atropisomerism at C–S bonds: asymmetric synthesis of diaryl sulfoxides by dynamic resolution under thermodynamic control

157. Quantifying end-to-end conformational communication of chirality through an achiral peptide chain

156. Conformational Preferences of a Polar Biaryl: a Phase- and Enantiomeric Purity-Dependent Molecular Hinge


154. Controlling axial conformation in 2-arylpuridines and 1-arylisoquinolines: application to the asymmetric synthesis of QUINAP by dynamic thermodynamic resolution

153. N to C aryl migration in lithiated car bamates: α-arylation of benzylic alcohols
152. Doubly dearomatising intramolecular coupling of a nucleophilic and an electrophilic heterocycle

151. Enantiomerically enriched atropisomeric N,N’-diaryl ureas by oxidative kinetic resolution of their 2-sulfanyl derivatives

150. Transmission of stereochemical information over nanometre distances in chemical reactions

149. α-Arylation of cyclic amines by aryl transfer in lithiated ureas

148. Relaying stereochemistry through aromatic ureas: 1,9 and 1,15 remote stereocontrol

147. Asymmetric synthesis of biaryl atropisomers by dynamic resolution on condensation of biaryl aldehydes with (−)-ephedrine or a proline-derived diamine

146. Helix persistence and breakdown in oligoureas of metaphenylenediamine: apparent diastereotopicity as a spectroscopic marker of helix length in solution

145. Conformation and Stereodynamics of 2,2’-Disubstituted N,N’-Diaryl Ureas

144. α-Pyridylation of chiral amines via urea coupling, lithiation and rearrangement

143. Remote Control of Stereochemistry: Communicating Information via Conformation

142. Atropisomers Exhibiting Highly Diastereoselective Reactivity

141. Oxidative fragmentation of bicyclic hydroxy silanes and stannanes: a strategy for the stereoselective synthesis of kainoids
135. Substituted Diarylmethylamines by Stereospecific Intramolecular Electrophilic Arylation of Lithiated Ureas

134. Transmitting information along oligoparaphenylenes: 1,12-stereochemical control in a terphenyl tetracarboxamide

133. Synthesis of densely functionalised arenes using [2+2+2] cycloaddition reactions

132. Synthesis and stacked conformations of symmetrical and unsymmetrical oligo-ureas of metaphenylenediamine


130. Azabicyclic amino acids by stereoselective dearomatizing cyclization of the enolates of N-nicotinoyl glycine derivatives

129. The twisted amide 2-quinuclidone: 60 years in the making

128. Lateral lithiation of N,N’-diaryl ureas

127. BBC Radio 4: The Isomers Have It
Jonathan Clayden (presenter Sue Nelson; producer Helen Sharp), *BBC Radio 4*, 5th July 2006, 9.00-9.30 pm

126. Three groups good, four groups bad? Atropisomerism in ortho-substituted diaryl ethers

125. Stereochemical relays: communication via conformation

124. Conformational communication between the Ar–CO and Ar–N axes in 2,2’-disubstituted benzanilides and their derivatives

123. Addition of lithiated tertiary aromatic amides to epoxides and aziridines: asymmetric synthesis of (S)-(++)-mellein

122. Contra-Friedel-Crafts tert-butylation of substituted aromatic rings via directed metallation and sulfinylation

121. Synthesis of multiply ortho-substituted diaryl ethers via lithiation and oxidation of a dibenzosiloxane (phenoxasilin)

120. Diastereoselective synthesis of atropisomers containing two non-biaryl stereogenic axes: stereochemical relay through stereogenic centres in dihydrostilbene-2,2’-dicarboxamides
119. Conformational arm-wrestling: battles for stereochemical control in benzamides bearing matched and mismatched chiral 2- and 6- substituents

118. Conformational preference in aromatic amides bearing chiral or alko substituents: its origin and application to relayed stereoc control

117. ‡Editorial – Inaugural issue of Beilstein Journal of Organic Chemistry

116. Kinetic and thermodynamic stereocontrol in the atroposelective formation of sulfoxides by oxidation of 2-sulfanyl-1-naphthamides

115. Cyclization of lithiated pyridine- and quinolinecarboxamides: synthesis of partially saturated pyrrolypyridines and spirocyclic beta-lactams

114. Slow interconversion of enantiomeric conformers or atropisomers of anilide and urea derivatives of 2-substituted anilines.

113. Ring-selective functionalisation of N,N'-diarylureas by regioselective N-alkylation and directed ortho-metallation

112. Diastereoselective protonation of extended pyrrol-3-en-2-one enolates: an attempted “de-epimerisation”

111. Asymmetric ortholithiation of amides by conformationally mediated chiral memory: an enantioselective route to naphtho- and benzofuranones

110. ‡Focus Article: Ultra-remote stereocontrol by conformational communication of information along a carbon chain

109. Chemistry of domoic acid, isodomoic acids and their Analogues

108. The synthesis of (−)-isodomoic acid C

107. Using dipoles to control the directionality of functional groups: syn and anti oriented benzene-1,3-dicarboxamides

106. Can relief of ring-strain in a cyclopropylmethyl lithium drive the Brook rearrangement?


104. Dearomatising rearrangements of lithiated thiophenecarboxamides
Publications

103. Total synthesis of kainoids by dearomatizing anionic cyclisation

102. Cyclisations of organolithiums onto aromatic rings

101. The directed metallation of aromatic compounds

100. Ultra-remote stereocontrol by conformational communication of information along a carbon chain

99. Dynamic resolution of atropisomeric amides using proline-derived imidazolidines and ephedrine-derived oxazolidines

98. Sulfoxides as “Traceless” Resolving Agents for the Synthesis of Atropisomers by Dynamic or Classical Resolution

97. ‡Atropisomerism (Preface to Tetrahedron Symposium in print)
Jonathan Clayden, Tetrahedron 2004, 60, 4335

96. Nucleophilic addition to electron-rich heteroaromatics: dearomatising anionic cyclisations of pyrrolecarboxamides

95. Controlling chemoselectivity in the Lithiation of Substituted Aromatic Tertiary Amides

94. Fast racemisation and slow epimerisation of laterally lithiated amides: stereochemical evidence for the mechanism of inversion of amide-substituted benzyllithiums

93. Atropisomers and near-atropisomers: achieving stereoselectivity by exploiting the conformational preferences of aromatic amides

92. β-Lactams and γ-lactams by 4-exo-trig and 5-endo-trig anionic cyclisation of lithiated acrylamide derivatives

Ed. Arthur Greenberg, Curt M. Breneman and Joel F. Liebman (Wiley);

90. Stereospecific photochemical ring expansion of lithiated benzamides

89. Variations in the solid-state, solution and theoretical structures of a laterally deprotonated aromatic tertiary amide

88. Stereospecific dearomatising cyclisation of tertiary α-amidoorganolithiums
Jonathan Clayden, Faye E. Knowles and Christel J. Menet, Synletr, 2003, 1701-1703

87. Synthesis of α-methyl kainic acid by stereospecific lithiation-dearomatizing cyclization of a chiral benzamide

86. Atropisomeric γ-lactams by dearomatising, directed organolithiation, and anionic cyclisation

85. β-Lactams and γ-lactams by 4-exo-trig and 5-endo-trig anionic cyclisation of lithiated acrylamide derivatives
Publications

86. 2,3-Dihydroisoindolones by cyclisation and rearomatisation of lithiated benzamides

85. Dearomatizing Cyclization of Arylsulfonylalkoxyxymethyl lithiums: A Route to the Podophyllotoxin Skeleton


83. Intermolecular dearomatizing addition of organolithiums to N- benzoyl amides of 2,2,6,6-tetramethylpiperidine;

82. Carbolithiation of aromatic rings: cyclohexadienes from N-aroyl-2,2,6,6-tetramethylpiperidines;

81. Enantioselective synthesis by lithiation to generate planar or axial chirality;

80. ‡Organolithiums: Selectivity for Synthesis

79. Synthesis of (–)-Kainic Acid using Chiral Lithium Amides in an Asymmetric Dearomatizing Cyclization;

78. Lithium-sulfoxide-lithium exchange for the asymmetric synthesis of atropisomers under thermodynamic control;

77. Atroposelectivity in the Electrophilic Substitution Reactions of Laterally Lithiated and Silylated Tertiary Amides;

76. Dearomatising annelation of five-membered rings to naphthalenes by organolithium cyclisation;

75. Dearomatising disrotatory electrocyclic ring closure of lithiated N-benzyloxazolidines;

74. “Meso-selective” functionalisation of N-benzyl-α-methylbenzylamine derivatives by α-lithiation and alkylation;

73. Lithiation and stereoselective transformations of 3-aroyl-2,2,4,4-tetramethoxyxazolidines (TMO amides), a new class of acid-labile atropisomeric amides;

72. Pathways for decomposition of THF by organolithiums: the role of HMPA;

71. Stereodynamics of bond rotation in tertiary aromatic amides;

70. Asymmetric deprotonation and dearomatising cyclisation of N-benzyl benzamides using chiral lithium amides: formal synthesis of (–)-kainic acid;

69. Conformational preference and remote (1,10) stereocontrol in biphenyl-2,2′-dicarboxamides;


13
52. Atropisomeric Diastereoisomers from Nucleophilic Attack on 8-Acyl-1-Naphthamides;  

51. Atroposelective Attack of Nucleophiles on 2-Formyl-1-Naphthamides and their Derivatives; Chelation and Non-Chelation Control;  

50. Atroposelective Attack of Nucleophiles and Electrophiles on 2-Acyl-1-Naphthamides and their Enolates;  

49. Dynamically Resolved peri-Substituted 2-Formyl Naphthamides: A New Class of Atropisomeric Chiral Auxiliary;  

48. Synthesis of (+)-Kainic acid by Dearomatising Cyclisation of a Lithiated N-Benzyl p-Anisamide;  

47. 1,3,4,5-Tetrahydroazepin-2-ones by Dearomatising Anionic Cyclisation of N-Allyl-1-Naphthamides;  

46. Diastereoselective Ortholithiation and Conformational Control in Stereospecific Dearomatising Anionic Cyclisations;  

45. Stereospecific Formation of Tetrasubstituted Centres from Trisubstituted Centres during Dearomatising Anionic Cyclisations;  

44. Perilitiation and the Synthesis of 8-Substituted-1-Naphthamides;  
Jonathan Clayden, Christopher S. Frampton, Catherine McCarthy and Neil Westlund, Tetrahedron, 1999, 55, 14161-14184

43. Bonded peri-Interactions Govern the Rate of Racemisation of Atropisomeric 8-Substituted 1-Naphthamides;  

42. Diastereoisomeric Atropisomers of peri-Substituted Naphthamides: Synthesis, Stereoselectivity and Stability;  

41. Enantioselective Synthesis of Atropisomeric Amides by Dynamic Resolution: Thermodynamic Control with a Proline-Derived Diamine Resolving Agent;  

40. Diastereoselective Nucleophilic Additions to Vinyl Phosphine Oxides;  

39. Synthesis of Atropisomeric Diamides with Remotely Related Stereogenic Axes by Stereoselective Additions to Imines;  

38. Synthesis of Atropisomeric 2-(1-Aminoalkyl)-1-naphthamides by Stereoselective Addition of Organolithiums to a 2-Imino-1-naphthamide;  

37. Book Review: "Named Organic Reactions": T. Laue and A. Plagens (Wiley);  


32. Stereocontrol with Rotationally Restricted Amides; Jonathan Clayden, Synlett., 1998, 810-816


3. Stereocontrolled Synthesis of R or S, E or Z Unsaturated α-Amino Acids by Enantio- and Diastereoselective Epoxidation of δ-Hydroxy Allylic Phosphine Oxides;

2. Asymmetric Epoxidations and Kinetic Resolutions of δ-Hydroxy Allylic Phosphine Oxides;

1. The Synthesis of δ-Hydroxy Allylic Phosphine Oxides by Palladium(II)-Catalysed Allylic Transposition;