

Complete List of Publications of Vinod Kumar Singh

Patents

1. Preparation of 6,7,8,9-Tetrahydro-5H-indolo[3,2-d]pyrimidines and Analogs as GABA Receptor Ligands (A. Thurkauf, A. Hutchison, and V. K. Singh, **International Patent**, WO 92 06, 094, 1992; CA 117: 48538t).
2. Certain Cycloalkyl and Azacycloalkyl Pyrrolopyrimidine; A new class of GABA Brain Receptor Ligands (A. Thurkauf, A. Hutchison, and V. K. Singh, **U.S. Patent**, 1993, No. 5,216,159).
3. Process for Preparation of Cycloalkyl- and azacycloalkylpyrrolopyrimidines Useful as GABA_a Receptor Ligands (A. Thurkauf, A. Hutchison, and V. K. Singh, **Braz. Patent No.**, 1994, 92 01, 262; CA 121: 255817f).
4. Benzimidazole and Pyridylimidazole Derivatives (G. Li, J. M. Peterson, P. Albaugh, K.S. Currie, G. Cai, L.M. Gustavason, K. Lee, A. Hutchison, G.D. Maynard, J. Yun, L.H. Xue, M. Ghosh, N. Liu, G.P. Luke, V.K. Singh, and S. Mitchell **U.S. Patent** filed on 21-12-2001; Case no. 01-019A).
5. Novel Molecules to develop drug for treatment of Osteoporosis (K.V.S. Rao, M.R. Wani, V. Manivel, P.S. Parameswaran, Vinod K. Singh, R.V. Anand, E. Desa, G.C. Mishra, A. Chatterji **Indian Patent** 0412NF2003, India, 27/02/2004).
6. Method and composition for treating with osteoclastogenesis inhibiting amino acid or dicarboxylic acid derivatives (K.V.S. Rao, M.R. Wani, V. Manivel, P.S. Parameswaran, Vinod K. Singh, R.V. Anand, E. Desa, G.C. Mishra, A. Chatterji **US Patent**, 2005, No A1 20050421).

Research papers

(1983 - 1990)

7. A Three-Carbon Annulation of Methyl Oleate to a Prostaglandin Analog (V. K. Singh and Sukh Dev, **Indian J. Chem.**, 1983, 22B, 319).
8. A Simple, Biogenetically Modelled Synthesis of 4-(methyl thio) Butyl Thiocyanate: The Reaction of Thiocyanate Anion with S-Methyl-(1,n)-epithonium ions (M.H. Benn and V. K. Singh, **Can. J. Chem.**, 1986, 64, 940).
9. A Stable and Easily Prepared Catalyst for the Enantioselective Reduction of Ketones. Application to Multistep Synthesis (E. J. Corey, R. K. Bakshi, S. Shibata, C. P. Chen and V. K. Singh, **J. Am. Chem. Soc.**, 1987, 109, 7925).
10. Ricinoleic Acid to Prostaglandins-I: Synthesis of Methyl 2-(6'-Methoxycarbonylhexyl)-cyclopent-2-en-1-one-3-carboxylate & PGE₁ (S. Swaminathan, V. K. Singh & Sukh Dev, **Indian J. Chem.**, 1988, 27B, 1069).
11. The Chemistry of Thujone. XIV. Synthesis of Biologically Active Aryl Terpenoid Analogs (C. Carvalho, W. R. Cullen, M. D. Fryzuk, H. Jacobs, B. R. James, J. P. Kutney, K. Piotrowska, and V. K. Singh, **Helv. Chim. Acta.**, 1989, 72, 205).

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12. Practical & Useful Methods for the Enantioselective Reduction of Unsymmetrical Ketones (V. K. Singh, **Synthesis**, 1992, 7, 605).
13. A Mild Method for Conversion of Epoxides into α -Chloro Ketones (S. Raina, D. Bhuniya, and V. K. Singh, **Tetrahedron Lett.**, 1992, 33, 6021).

14. Inversion of Configuration of α -Trisubstituted (Neopentyl) type Secondary Alcohols (R. M. Moriarty, H. Zhuang, R. Penmasta, K. Liu, A. K. Awasthi, S. M. Tuladhar, M. S. C. Rao and V. K. Singh, **Tetrahedron Lett.**, 1993, 34, 8029).
15. Homochiral Lithium Amides: Enantioselective Deprotonation of Cyclohexene Oxide (D. Bhuniya and V. K. Singh, **Synth. Commun.**, 1994, 24, 375).
16. Enantioselective Deprotonation of Cyclohexene Oxide to (*R*)-2-Cyclohexen-1-ol (D. Bhuniya and V. K. Singh, **Synth. Commun.**, 1994, 24, 1475).
17. Recent Aspects of Enantioselective Epoxidation of Olefins (A. DattaGupta, D. Bhuniya, and V. K. Singh, **J. Indian. Inst. Sci.**, 1994, 74, 71).
18. Diastereoselective Formation of (2*S*, 4*S*)-1,3-Oxazolidines from (*S*)-Diphenylvalinol (A. DattaGupta, B. Singh, and V. K. Singh, **Indian. J. Chem.**, 1994, 33B, 981).
19. Synthesis of Homochiral Bis (oxazoliny)pyridine Type Ligands for Asymmetric Cyclopropanation Reactions (A. DattaGupta, D. Bhuniya, and V. K. Singh, **Tetrahedron**, 1994, 50, 13725).
20. Reaction of Epoxides with Activated DMSO Reagent. General Method for Synthesis of α -Chlorocarbonyl Compounds: Application in Asymmetric Synthesis of (3*S*)-2,3-Oxidosqualene (S. Raina and V. K. Singh, **Tetrahedron**, 1995, 51, 2467).
21. Synthesis of Versatile Intermedites for Cyclopentanoid Natural Products via Enantioselective Deprotonation of substituted Cyclopentene Oxide (D. Bhuniya, A. DattaGupta, and V. K. Singh, **Tetrahedron Lett.**, 1995, 36, 2847).
22. DDQ as A Mild and Efficient Catalyst for Deprotection of Tetrahydropyranyl Ethers (S. Raina and V. K. Singh, **Synth. Commun.**, 1995, 25, 2395).
23. New Insight Regarding the Cyclization Pathway for Sterol Biosynthesis from (*S*)-2,3-Oxidosqualene (E. J. Corey, S. C. Virgil, H. Cheng, C. H. Baker, S. P. T. Matsuda, V. K. Singh, S. Sarshar, **J. Am. Chem. Soc.**, 1995, 117, 11819).

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24. A Mild Method for the Cleavage of *tert*-Butyldimethylsilyl and Tetrahydropyranyl Ethers by Ceric Ammonium Nitrate (A. DattaGupta, R. Singh, and V. K. Singh, **Synlett**, 1996, 69).
25. Facile Bromination of *O*-Benzylidene Sugars and THP Ethers with NBS in Chloroform in the presence of AIBN (S. Raina, K. K. Srivastava, E. Sampath Kumar, and V. K. Singh, **Synth. Commun.**, 1996, 26, 121).
26. Catalytic Enantioselective Allylic Oxidation of Olefins with Copper Complexes of Chiral Nonracemic Bis(oxazoliny)pyridine type Ligands (A. DattaGupta and V. K. Singh, **Tetrahedron Lett.**, 1996, 37, 2633).
27. Asymmetric Synthesis of 5-Hexadecanolide, Pheromone of the Queen of the oriental Hornet, *Vespa Orientalis* (S. Raina and V. K. Singh, **Tetrahedron**, 1996, 52, 4479).
28. Design, Synthesis, and Application of Chiral Nonracemic Lithium Amide Bases in Enantioselective Deprotonation of Epoxides (D. Bhuniya, A. DattaGupta, and V. K. Singh, **J. Org. Chem.**, 1996, 61, 6108).
29. Cu(OTf)₂-DBN/DBU Complex as an efficient Catalyst for Allylic Oxidation of Olefins with *tert*-Butyl Perbenzoate (G. Sekar, A. DattaGupta, and V. K. Singh, **Tetrahedron Lett.**, 1996, 37, 8435).
30. The Antineoplastic Behaviour of Nitrosoureas: An ab initio study (A. Yadav and V. K. Singh, **J. Mol. Structure** (Theochem), 1997, 389, 191.)
31. Reductive Cleavage of *tert*-Butyldimethylsilyl Ether via Intramolecular Transfer of Hydride (P. Saravanan, S. Gupta, A. DattaGupta, S. Gupta, and V. K. Singh, **Synth. Commun.**, 1997, 27, 2695).
32. Catalytic Enantioselective Cyclopropanation of Olefins using Carbenoid Chemistry (V. K. Singh, A. DattaGupta, and G. Sekar, **Synthesis**, 1997, 12, 137).

33. Rearrangement of Epoxides with Lithium Dialkylamide-Lithium tert-Butoxide (P. Saravanan, A. DattaGupta, D. Bhuniya, and V. K. Singh, **Tetrahedron**, 1997, 53, 1855).
34. A Practical Synthesis of (2*R*, 5*R*)-Hexanediol (P. Saravanan, S. Raina, T. Sambamurthy, and V. K. Singh, **J. Org. Chem.**, 1997, 62, 2669).
35. An Efficient Synthesis of Chiral Nonracemic Diamines: Application in Asymmetric Synthesis (P. Saravanan and V. K. Singh, **Tetrahedron Lett.**, 1998, 39, 167).
36. An Efficient Method for Deprotection of Acetals: Synthesis of Chiral Diols for Asymmetric synthesis (P. Saravanan, M. Chandrasekhar, R. Vijaya Anand, and V. K. Singh, **Tetrahedron Lett.**, 1998, 39, 3091).
37. Asymmetric Kharasch Reaction: Catalytic Enantioselective Allylic Oxidation of Olefins using Chiral Pyridine bis(diphenyloxazoline) - Copper Complexes and *tert*-Butyl Perbenzoate (G. Sekar, A. DattaGupta, V. K. Singh, **J. Org. Chem.**, 1998, 63, 2961).
38. Cu(OTf)₂ Catalyzed Trimethylsilyl Cyanide Addition to Carbonyl Compounds (P. Saravanan, R. Vijaya Anand, and V. K. Singh, **Tetrahedron Lett.**, 1998, 39, 3823).
39. Synthesis of (3*R*, 4*R*)-3,4-Hexanediol from D-Mannitol (P. Saravanan and V. K. Singh, **J. Chem. Res. (S)**, 1998, 497).
40. An Investigation on Desilylation of Alkyl and Phenolic Silyl Ethers using FeCl₃ (P. Saravanan and V. K. Singh, **J. Ind. Chem. Soc.**, 1998, 565 (Invited article for a special issue in the honor of Dr. Sukh Dev).
41. An Efficient Method for Cleavage of Epoxides with Aromatic amines (G. Sekar and V. K. Singh, **J. Org. Chem.**, 1999, 64, 287).
42. An Efficient Method for Acylation Reactions (P. Saravanan and V. K. Singh, **Tetrahedron Lett.** 1999, 40, 2611).
43. Efficient Method for Cleavage of Aziridines by Aromatic amines (G. Sekar and V. K. Singh, **J. Org. Chem.**, 1999, 64, 2537).
44. Solvent Free Thioacetalization of Carbonyl Compounds Catalyzed by Cu(OTf)₂-SiO₂ (R. Vijaya Anand, P. Saravanan, and Vinod K. Singh, **Synlett**, 1999, 415).
45. Enantiomerically Pure β -Amino Alcohols by Enzymatic Resolution (G. Sekar.; R. M. Kamble; V. K. Singh **Tetrahedron: Asymmetry**, 1999, 10, 3663).
46. An Efficient Method for Diacetylation of Aldehydes (K. L. Chandra.,; P. Saravanan.; V. K. Singh, **Synlett**, 2000, 359).
47. Triphase Catalysis in Epoxidation of α,β -Enones with Polymer bound Quaternary Ammonium Salts (R. Vijaya Anand and V. K. Singh **Synlett**, 2000, 807).
48. An Efficient Method for the Cleavage of Aziridines with Hydroxyl Compounds (B. A. Bhanu Prasad, G. Sekar, and V. K. Singh **Tetrahedron Lett.** 2000, 41, 4677).
49. Formal Total Synthesis of (+)-Boronolide (M. Chandrasekhar, Sushil Raina, and V. K. Singh **Tetrahedron Lett.** 2000, 41, 4969).
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51. An Efficient Method for Aromatic Friedel-Crafts Alkylation, Acylation, Benzoylation, and Sulfonylation Reactions (R. P. Singh, R. M. Kamble, K. L. Chandra, P. Saravanan, and V. K. Singh **Tetrahedron** 2001, 57, 241).
52. An Efficient Synthesis of (3*R*,4*R*)-O-Isopropylidene-1,6-Hexanediol (P. Saravanan and V. K. Singh **Synth. Commun.** 2001, 31 1383).

53. One-Step Conversion of Silyl/THP ethers into the Corresponding Acetates (K. L. Chandra, P. Saravanan, and V. K. Singh **Tetrahedron Lett.** 2001, 42, 5309).
54. An efficient Method for Allylation of Ketones with Allylstannanes (R. M. Kamble and V. K. Singh (**Tetrahedron Lett.** 2001, 42, 7525).
55. Lewis Acid Catalyzed Acylation Reactions: Scope and Limitations (K.L. Chandra, P. Saravanan, R.P. Singh, and V. K. Singh **Tetrahedron** 2002, 58, 1369).
56. A One-Pot Synthesis of *o*-Chloro Acetates/Benzoates from Epoxides (K.L. Chandra, A. Bisai, and V. K. Singh **J. Chem. Res.** 2002, 221).
57. Synthesis of Chiral Nonracemic 1,2-diamines from *O*-Acetylmandelic acid: Application in Enantioselective Deprotonation of Epoxides and Diethylzinc Addition to Aldehydes (P. Saravanan, A. Bisai, S. Baktharaman, and V. K. Singh **Tetrahedron** 2002, 58, 4693 (Invited for symposia-in-print).
58. Catalytic Enantioselective Allylic oxidation of Olefins (R. M. Kamble, M. Chandrasekhar, and V. K. Singh **Proceedings in Indian National Science Academy** 2002, 68, A, No. 5, 423 (invited article).
59. An efficient strategy for synthesis of 5-hydroxyalkyl butan-4-olides from D-mannitol: Total synthesis of (-)-Muricatacin (M. Chandrasekhar, K.L. Chandra, and V. K. Singh **Tetrahedron Lett.** 2002, 43, 2773).
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61. Total Synthesis of (-)- and (+)-lentiginosine (K.L. Chandra, M. Chandrasekhar, and V. K. Singh **J. Org. Chem.** 2002, 67, 4630).
62. Elaboration of a Baylis-Hillman adduct to (-)-acaterin and its diastereomer through ring closing metathesis (R. V. Anand, S. Baktharaman, and V. K. Singh **Tetrahedron Lett.** 2002, 43, 5393).
63. Studies on Ring Cleavage of Aziridines with Hydroxyl Compounds (A. Bhanu Prasad, R. Sanghi, and V. K. Singh **Tetrahedron** 2002, 58, 7355).
64. An Alternative for Swern Oxidation (A. Bisai, M. Chandrasekhar, V. K. Singh **Tetrahedron Lett.** 2002, 43, 8355).
65. A Model synthetic Approach towards the Furanacetal Component of Azadirachtin: A Potent Insect Antifeedant (S. Raina, B.A. Bhanu Prasad, and V.K. Singh **Arkivoc** 2003, VI, 16 (Invited article in honor of Dr. Sukh Dev's 80th birthday).
66. A Ring Closing Metathesis Approach towards Synthesis of (+)-Diplodialide A (R. Vijaya Anand, S. Baktharaman, and V. K. Singh **J. Org. Chem.** 2003, 68, 3356).
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71. A Facile One Step Synthesis of β -Alkoxy Lactone via Sequential Lactonization and 1,4-Addition of Alkoxide Group: Total Synthesis of All the Stereoisomers of Dihydrokawain-5-ol (R. P. Singh and Vinod K. Singh **J. Org. Chem.** 2004, 69, 3425).

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74. 2-Aryl-*N*-tosylazetidines as formal 1,4 dipoles for [4+2] cycloaddition reactions with nitriles: An easy access to the tetrahydropyrimidine derivatives (B.A.B. Prasad, A. Bisai, and Vinod K. Singh **Org. Lett.** 2004, 6, 4829).
75. Synthesis of Mannich type products via a three-component coupling reaction (G. Pandey, R.P. Singh, A. Garg, and Vinod K. Singh **Tetrahedron Lett.** 2005, 46, 2137).
76. Imino-ene Reaction of *N*-tosyl arylaldimines with α -methylstyrene: application in synthesis of important amines (M.K. Pandey, A. Bisai, A. Pandey, and Vinod K. Singh **Tetrahedron Lett.** 2005, 46, 5039).
77. Asymmetric Synthesis of all the Stereoisomers of Tarchonanthuslactone (S. Baktharaman, S. Selvakumar, and Vinod K. Singh **Tetrahedron Lett.** 2005, 46, 7527-7529).
78. Synthesis of chiral vicinal C_2 symmetric and unsymmetric bis(sulfonamide) ligands of *trans*-1,2-cyclohexanediamine by aminolysis of *N*-tosylaziridines (A. Bisai, B.A.B. Prasad, and Vinod K. Singh **Tetrahedron Lett.** 2005, 46, 7935).

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79. Enantioselective turnover in glyoxylate-ene reaction catalyzed by chiral copper complexes (M.K. Pandey, A. Bisai, and Vinod K. Singh **Tetrahedron Lett.** 2006, 47, 897).
80. Enantioselective oxidation of olefins catalyzed by chiral copper bis(oxazolonyl) pyridine complexes: a reassessment (S.K. Ginotra and Vinod K. Singh **Tetrahedron** 2006, 62, 3573).
81. Enantioselective One-Pot Three-Component Synthesis of Propargylamines (A. Bisai and Vinod K. Singh **Org. Lett.** 2006, 8, 2405).
82. Highly Enantioselective Direct Aldol Reaction Catalyzed by Organic Molecules (M. Raj, V. Maya, S. Ginotra, Vinod K. Singh **Org. Lett.** 2006, 8, 4097).
83. Unprecedented Approach towards 2-Substituted Cyclobutanones (S. Baktharaman, S. Selvakumar, and Vinod K. Singh **Org. Lett.** 2006, 8, 4335).
84. Asymmetric Synthesis of (+)-Cardiobutanolide (A. Garg, R..P. Singh, and Vinod K. Singh **Tetrahedron** 2006, 62, 11240).
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87. Enantioselective Diethylzinc Addition to Aldehydes Catalyzed by Ti(IV) Complex of Unsymmetrical Chiral bis(sulfonamide Ligands of *trans*-Cyclohexane 1,2-Diamine (A. Bisai, P.K. Singh, and V. K. Singh **Tetrahedron** 2007, 63, 598).
88. Enantioselective Friedel-Crafts alkylation of indoles with nitroalkenes catalyzed by a bis(oxazoline)-Cu(II) complex (P.K. Singh, A. Bisai, and V.K. Singh **Tetrahedron Lett.** 2007, 48, 1127).

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90. Highly Enantioselective Water-Compatible Organocatalyst for Michael Reaction of Ketones to Nitro Olefins (Vishnumaya and Vinod K. Singh, **Org. Lett.** 2007, 9, 1117).
91. Studies on the Reaction of Aziridines with Nitriles and Carbonyls: Synthesis of Imidazolines and Oxazolines (S. Gandhi, A. Bisai, B.A. Bhanu Prasad, and V.K. Singh, **J. Org. Chem.** 2007, 72, 2133).
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93. Lewis Acid Catalyzed Regioselective Ring Opening of Azetidines with alcohols and thiols (S.K. Dwivedi, S. Gandhi, N. Rastogi, and Vinod K. Singh **Tetrahedron Lett.** 2007, 48, 5375).
94. Activation of DMSO by Phosphonitrilic chloride: An Efficient Method for oxidation of Alcohols (S.K. Pandey, A. Bisai, and Vinod K. Singh **Synth. Comm.** 2007, 37, 4099).
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98. Highly Enantioselective Friedel-Crafts Reaction of Indoles with 2-Enoylpyridine 1-Oxides Catalyzed by Chiral Pyridine 2,6-Bis(5',5'-diphenyloxazoline)-Cu(II) Complexes (P.K. Singh and V.K. Singh **Org. Lett.** 2008, 10, 4121).
99. Synthesis of Chiral Organocatalysts derived from Aziridines: Application in Asymmetric Aldol Reaction (S. Gandhi and V. K. Singh, **J. Org. Chem.**, 2008, 73, 9411).
100. PPh₃/halogenating agents-mediated highly efficient ring opening of activated and non-activated aziridines (M. Kumar, S. K. Pandey, S. Gandhi **Tetrahedron Lett.** 2008, 49, 363).
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111. Enantioselective Reactions Catalyzed by Chiral Pyridine 2,6-bis(5',5'-diphenyloxazoline)-Metal Complexes (P.K. Singh and V.K. Singh **Pure and Appl. Chem.** 2010, 82, 1845).

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115. Enantioselective Enolate Protonation in Sulfa-Michael Addition to α -Substituted *N*-acryloyloxazolidin-2-ones with Bifunctional Organocatalyst (N.K. Rana and V.K. Singh **Org. Lett.** 2011, 13, 6520).
116. Enantioselective One-pot Three-component Synthesis of Propargylamines Catalyzed by Copper(I)-Pyridine bis-(oxazoline) Complexes (A. Bisai and V.K. Singh **Tetrahedron** 2012, 68, 3480).
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