

Publications

1. Pd-Catalyzed Regio- and Stereoselective C–Nucleoside Synthesis from Unactivated Uracils and Pyranoid Glycals. Faheem Rasool, **Debaraj mukherjee***, **Organic Letters**, 2017, 19, 4936–4939)
2. Regiospecific Synthesis of Ring A Fused Withaferin A Isoxazoline Analogues: Induction of Premature Senescence by W-2b in Proliferating Cancer Cells. Faheem Rasool, Debashis, Anindya Goswami and **Debaraj Mukherjee***, **Nature Scientific Reports**, 2017, 7, 13749.
3. RU Rasool, D Nayak, S Chakraborty, MM Faheem , B Rah , P Mahajan, V Gopinath , A Katoch., Z Iqra, SK Yousuf , **Debaraj Mukherjee**, LD Kumar, A Nargotra and A Goswami*, “AKT is indispensable for coordinating Par-4/JNK cross talk in p21 downmodulation during ER stress”, **Oncogenesis**, 2017, 6, e341.
4. One-pot Mukaiyama type carbon-Ferrier rearrangement of glycals: Application in the syntheses of chromanone 3-C-glycosides. Ashutosh K. Dash, Madhu Babu Tatina, Said Khaalid Yousuf, S. Raina and **Debaraj Mukherjee*** **Carbohydrate Research**, 2017, 438, 1-8.
5. Reaction of glycals with organic peroxides: Synthesis of 2-iodo, 2-deoxy and 2,3-unsaturated glycosides. Faheem Rasool, **Debaraj mukherjee*** **Chemistry select**, 2016, 1, 6553-6557.
6. Diastereoselective sp²-sp³ coupling of sugar enol ethers with unactivated cycloalkenes: new entries to C-branched sugars. Nazar Hussain., Madhu Babu Tatina, Faheem Rasool, and **Debaraj Mukherjee*** **Org. Biomol. Chem.**, 2016, 14, 9989-9992.
7. Isolation and conversion of Penicillic acid to 6- iodo- α -pyran-2,5-dione: A key intermediate for the synthesis of Pectinolide F Deepak K. Sharma, Sundeep Jaglan & **Debaraj Mukherjee*** **Synthetic Communications**, 2016, 46, 902-908.
8. Ligand Free Palladium Catalyzed Synthesis of 3-Aryl/heteroaryl-4-Indolylmaleimide and its Antimicrobial Activity. Deepak K. Sharma, Vikrant S. Rajput, Samsher Singh, Rashmi Sharma, Inshad A. Khan, and **Debaraj Mukherjee*** **ChemistrySelect** 2016, 1, 1954-1958.
9. Tandem gem-dichlorination and nitrile oxide generation from chlorochromene aldoximes: synthesis of a new class of room temperature fluxional 4-chromanone derivatives. Ashutosh K. Dash, Chaitanya K. Jaladanki, Dilip K. Maiti, Deepika Singh, Anil K. Tripathi, Vivek K. Gupta, Prasad V. Bharatam, and **Debaraj Mukherjee*** **ChemistrySelect** 2016, 3, 567-571.
10. Escherichia coli N-Acetylglucosamine-1-Phosphate Uridyltransferase /Glucosamine-1-Phosphate-Acetyltransferase (GlmU) Inhibitory Activity of Terreic Acid Isolated from Aspergillus terreus. Rashmi Sharma · Mallikharjuna Rao Lambu · Urmila, Jamwal · Chitra Rani, · Reena Chib, Priya Wazir, **Debaraj Mukherjee**, Asha Chaubey, Inshad Ali Khan*. **J Biomol Screen**, 13, 2016.
11. Copper-Manganese Spinel Oxide Catalyzed Synthesis of Amides and Azobenzenes via Aminyl Radical Cations .Shaista Sultan, Manjeet Kumar, Shekaraiah Devari, **Debaraj Mukherjee**, Bahawal Ali Shah*. **ChemCatChem**, 2016, 8, 703-707.
12. Dual modulation of Ras-Mnk and PI3K-AKT-mTOR pathways: A Novel c-FLIP inhibitory mechanism of 3-AWA mediated translational attenuation through dephosphorylation of eIF4E. Reyaz ur Rasool, Bilal Rah, Hina Amin, Debasis Nayak, Souneek Chakraborty, Abdul Rawoof, Mubashir Javed Mintoo, Khalid Yousuf, **Debaraj Mukherjee**, Lekha Dinesh Kumar, Dilip Manikaro Mondhe & Anindya Goswami*. **Nature Scientific Reports**, 2016, 6, 18800.
13. Organo-zinc Promoted Diastereoselective C-Arylation of 1,2-Anhydrosugars from Arylboronic Acids” M. B. Tatina, A. K. Kusunuru, **Debaraj Mukherjee*** **Organic Letters**, 2015, 17, 4624–4627.

14. TEMPO-Promoted Domino Heck–Suzuki Arylation: Diastereoselective Cis-Diarylation of Glycals and Pseudoglycals A. K. Kusunuru, C. K. Jaladanki, M. B. Tatina, P.V.Bharatam, **Debaraj Mukherjee*** *Organic Letters*, 2015, 17, 3742–3745
15. “Desulfitative C-arylation of glycals using benzene sulfonyl chlorides” A. K. Kusunuru, T. Madhubabu, S. K. Yousuf, **Debaraj Mukherjee*** *European Journal of Organic Chemistry* 2015, 459–462.
16. PAWR-mediated suppression of BCL2 promotes switching of 3-azido withaferin A (3-AWA)-induced autophagy to apoptosis Q1 in prostate cancer cells B. Rah, R. ur Rasool, D. Nayak, S. K. Yousuf, **Debaraj Mukherjee**, L. D. Kumar, A. Goswami*, *Autophagy* 2015, 11, 1-18.
17. Cation Clock Reactions for the Determination of Relative Reaction Kinetics in Glycosylation Reactions: Applications to Gluco- and Mannopyranosyl Sulfoxide and Trichloroacetimidate Type Donors P. O. Adero, T. Furukawa, M. Huang, **Debaraj Mukherjee**, P. Retailleau, L. Bohe. David Crich*, *Journal of American Chemical Society*, 2015, 137, 10336-10345.
18. A therapeutically relevant, 3,3'-diindolylmethane derivative NGD 16 attenuates angiogenesis by targeting glucose regulated protein, 78kDa (GRP78), Debasis, Deepak, **Debaraj Mukherjee**, Anindya Goswami* *Chemico-Biological Interactions* 2015, 232, 58-67
19. “Transformation of glycals to $\alpha,\beta,\gamma,\delta$ - conjugated chirons under metal free condition”; T. Madhubabu, S. K. Yousuf, A. K. Kusunuru, **Debaraj Mukherjee*** *European Journal of Organic Chemistry*. 2014, 7333–7338.
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21. “Aldol reaction of kojic acid using alumina supported base catalyst and enzymatic resolution of the aldol adduct by CALB”; D. K. Sharma, B. Singh, **Debaraj Mukherjee***. *Tetrahedron Letters*, 2014, 55, 5846-5850.
22. “Zinc mediated activation of terminal alkynes: stereoselective synthesis of alkynyl glycosides”; T. MadhuBabu, A. K. Kusunuru, S. K. Yousuf, **Debaraj Mukherjee***. *Organic & Biomolecular Chemistry*., 2014, 12, 7900-7903.
23. “Diastereoselective synthesis of highly functionalized cis-1-oxadecalines via 6-endo-tet-cyclizations of 2-C-branched sugars”; M. R. Lambu and **Debaraj Mukherjee***. *RSC Advances*, 2014, 4, 37908-37913.
24. “Synthesis of C-spiro-glycoconjugates from sugar lactones via zinc mediated Barbier reaction”; M. R. Lambu, S. K. Yousuf, A. K. Tripathi, D. K. Sharma, A. Hussain, **Debaraj Mukherjee***. *RSC Advances* 2014, 4, 11023-11028.
25. “Highly diastereoselective 1,2-dichlorination of glycals using NCS/PPh₃: study of substituent and solvent effects. *Tetrahedron* A. Hussain, **Debaraj Mukherjee***. *Tetrahedron*, 2014, 70, 1133-1139
26. “A new class of bactericidal agents against S. aureus, MRSA and VRE derived from bisindolylmethane”; D. K. Sharma, A. K. Tripathi, R. Sharma, R. Chib, R. ur Rasool, A. Hussain, B. Singh, A. Goswami, I. A. Khan, **Debaraj Mukherjee***. *Med Chem Res*, 2013, 23, 1643-1653.

27. Synthesis, Pharmacodynamic and Pharmacokinetic Evaluation of a Novel, Therapeutically Relevant N-Glycosylated Derivative of DIM (NGD16) as Potential Inhibitor of Angiogenesis. Debasis Naya, Hina Ami, Bilal Ra, Deepak Sharma, Reyaz ur Rasoo, Ajai Prakash Gupt, Manoj Kushwah, **Debaraj Mukherjee** and Anindya Goswam*, **Chem. Biol. Interact.** 2014, 6, 278-288
28. "Tandem regio- and diastereo-selective synthesis of halogenated C-vinyl glycosides from unactivated arylacetylenes"; T. Madhubabu, A. K. Kusunuru, Syed Khalid Yousuf and **Debaraj Mukherjee***. **Chemical Communication**, 2013, 49, 11409-11411.
29. "Copper mediated highly stereoselective synthesis of C-glycosides from unactivated alkynes"; Anil Kumar, Syed Khalid Yousuf, **Debaraj Mukherjee***. **Chemical Communication**, 2013, 49, 10154-10156.
30. "Synthesis of carbohydrate fused chiral macrocyclic benzolactones through Sonogashira reaction"; Altaf Hussain, Mallikharjuna Rao L, Deepak K. Sharma, Anil K. Tripathi, Baldev Singh and **Debaraj Mukherjee***. **RSC Advances**, 2013, 3, 19899-19904
31. "Cyanuric chloride/sodium borohydride: a new reagent combination for reductive opening of 4,6-benzylidene acetals of carbohydrates to primary alcohols" T. Madhubabu, S. K. Yousuf, S. Aravinda, B. Singh, **Debaraj Mukherjee***. **Carbohydrate Research**, 2013, 381, 142-145.
32. "Medicinal chemistry of dihydropyran based medium ring macrolides related to aspergillides: selective inhibition of PI3K-alpha" M. R. Lambu, S. Kumar, S. K. Yousuf, D. K. Sharma, A. Hussain, A. Kumar, F. Malik, **Debaraj Mukherjee***. **Journal of Medicinal Chemistry**, 2013, 56, 6122-6135.
33. "Design and synthesis of carbohydrate based medium sized sulphur containing benzannulated macrocycles"; Applications of Sonogashira and Heck coupling" A. Hussain, S. K. Yousuf, D. Kumar, M. R. Lambu, B. Singh, **Debaraj Mukherjee***. **Tetrahedron**, 2013, 69, 5517-5524.
34. "Ammonium chloride mediated synthesis of alkyl glycosides and evaluation of their immunomodulatory activity"; D. K. Sharma, M. Lambu, T. Sidiq, A. Khajuria, A. K. Tripathi, S. K. Yousuf, **Debaraj Mukherjee***. **RSC Advances**, 2013, 3, 11450-11455.
35. "Fe/Al pillared clay catalyzed solvent-free synthesis of bisindolylmethanes using diversly substituted indoles and carbonyl compounds"; D. Sharma, A. Hussain, M. R. Lambu, S. K. Yousuf, S. Maity, B. Singh, **Debaraj Mukherjee***. **RSC Advances**, 2013, 3, 2211-2215.
36. "Synthesis of benzannulated chiral macrocycles embedded in a carbohydrate template by intramolecular base free Sonogashira reaction on alumina support"; A. Hussain, S. K. Yousuf, D. Kumar, M. R. Lambu, B. Singh, S. Maity, **Debaraj Mukherjee*** **Advanced Synthesis and Catalysis** 2012, 354, 933-1940.
37. "TCT mediated one-pot multicomponent transformation for the generation of orthogonally protected monosaccharide building blocks"; T. Madhubau, S. K. Yousuf, **Debaraj Mukherjee***. **Organic and Biomolecular Chemistry.**, 2012, 10, 5357-5360
38. "Design and synthesis of novel N,N'-glycoside derivatives of 3,3'-diindolylmethanes as potential antiproliferative agents" D. K. Sharma, B. A. Rah, M. Lambu, A. Hussain, S. K. Yousuf, G. Jamwal, Z. Ahmad, N. Chanauria, A. Nargotra, A. K. Tripathi, B. Singh, A. Goswami, **Debaraj Mukherjee***. **Med. Chem. Com.**, 2012, 3, 1082-1091.

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40. "Regioselective azidotrimethylsilylation of carbohydrates and applications thereof"; M. R. Lambu, S. K. Yousuf, **Debaraj Mukherjee***, Subhash Chandra Taneja*. **Organic and Biomolecular Chemistry**. 2012, 10, 9090-9098.
41. "Highly regio- and stereoselective one pot synthesis of carbohydrate based butyrolactones"; S. K. Yousuf, S. C. Taneja, **Debaraj Mukherjee***. **Organic Letters**, 2011, 13, 576-579.
42. "Structural modifications of withaferin-A and evaluation of in-vitro cytotoxicity; a comprehensive SAR"; S. K. Yousuf, R. Majeed, M. Ahmad, P. L. Sangwan, B. Purnima, A. K. Saxsena, K. A. Suri, **Debaraj Mukherjee***, S. C. Taneja. **Steroids**, 2011, 10–11, 1213-1222.
43. "Stereoselective conversion of dihydropyran, dihydrofuran and glycols to 1-azido-2-halo derivatives using NIS/NBS -TMSN₃ combination"; S. K. Yousuf, A. Hussain, D. K. Sharma, A. H. Wani, B. Singh, S. C. Taneja, **Debaraj Mukherjee***. **Journal of Carbohydrate Chemistry**, 2011, 30, 61-74.
44. "An efficient preparation of biologically important 1, 2 amino alcohols"; P. Gupta, A. Rouf, B. A. Shah, **Debaraj Mukherjee***, S. C. Taneja*. **Synthetic Communications**, 2011, 60, 3876.
45. "Synthesis and cytotoxicity of novel benzopyran derivatives"; A. K. Tripathi,* **Debaraj Mukherjee**, S Koul, S. C. Taneja, S. Agrawal, P. R Sharma, A. K. Saxena Indian J of Chem., 2011, 50B, 1619-1629.
46. "Cu-Mn Bimetallic catalyst for Huisgen [3+2]-cycloaddition"; S. K. Yousuf, **Debaraj Mukherjee***, B. Singh, S. C. Taneja. **Green Chemistry**, 2010, 12,1568-1572
47. "Multi-component cascade transformation of D-glucal to furan appended triazole glycoconjugates"; S. K. Yousuf, S. C. Taneja, **Debaraj Mukherjee***. **Journal of Organic Chemistry**., 2010, 75, 3097-3100.
48. "Reaction of carbohydrates with Vilsmeier reagent: a tandem selective chloro-O-formylation of sugars"; N. Thota, **Debaraj Mukherjee***, M. V. Reddy, S. K. Yousuf, S. Koul, S. C. Taneja. **Organic and Biomolecular Chemistry**., 2009, 7, 1280-1283.
49. "Facile synthesis of various 2-substituted-4-(2-pyridyl) benzopyran analogues as target potassium channel opener"; A. K. Tripathi, **Debaraj Mukherjee***, S. Koul, S. C. Taneja. **Arkivoc**, 2009, 4, 241-151.
50. "Allyl Tetrahydropyranyl Ether: A versatile Alcohol/Thiol Protecting Reagent"; B. Kumar, M. A. Aga, **Debaraj Mukherjee***, S. Chimni, S. C. Taneja*. **Tetrahedron Letters**, 2009, 50, 6236-6240.
51. "Domino Transformation of D-Glucal to Racemic- α -Substituted- α -Hydroxymethyl Furfuryl Derivatives" **Debaraj Mukherjee***, S. K. Yousuf, S. C. Taneja. **Organic Letters**, 2008, 10, 4831-4834
52. "Indium trichloride promoted stereoselective synthesis of *O*-glycosides from trialkyl orthoformates" **Debaraj Mukherjee***, S. K. Yousuf, S. C. Taneja. **Tetrahedron Letters**, 2008, 49, 4944-4948.

53. "An expedient chemo-enzymatic method for the synthesis of optically active masked 1,2-amino alcohols"; P. Gupta, S. C. Taneja*, B. A. Shah, **Debaraj Mukherjee***, R. Parshad, S. S. Chimni, G. N. Qazi. **Tetrahedron: Asymmetry**, 2008, 19, 1898-1903.
54. "Tandem acetalation-acetylation of sugars and related derivatives with enolacetates under solvent-free conditions"; **Debaraj Mukherjee**, B. A. Shah, P. Gupta, S. C. Taneja. **Journal of Organic Chemistry**, 2007, 72, 8965-8968.
55. "A rapid stereoselective C-glycosidation of indoles and pyrrole via indium trichloride promoted reactions of glycosyl halides"; **Debaraj Mukherjee**, S. K. Sarkar, U. S. Chowdhury and S. C. Taneja. **Tetrahedron Letters**, 2007, 48, 663-667.
56. "Synthesis of two Lewis-X trisaccharides using regiospecific glycosylation reactions"; **Debaraj Mukherjee**, S. K. Sarkar, P. Chattopadhyay, U. S. Chowdhury. **Journal of Carbohydrate Chemistry**, 2005, 24, 251-259.
57. "Synthesis of glycosides via indium(III) chloride mediated activation of glycosyl halide in neutral condition"; **Debaraj Mukherjee**, P. K. Roy, U. S. Chowdhury. **Tetrahedron**, 2001, 57, 7701-7704.

Review and Book Chapters

1. "Synthesis of macrolide natural products from carbohydrates", Mallikharjuna Rao Lambu, Ashutosh K. Dash, Nazar Hussain, Sunil Bhat and **Debaraj Mukherjee***, **Trends in Carbohydrate Chemistry**, 2017, Accepted.
2. "Carbohydrate Based Blood Antigens in Cancer: Current Status and Future Perspectives" Syed Khalid Yousuf, **Debaraj Mukherjee***, S. C. Taneja, **Letters in Drug Design & Discover**. 2012, 9, 263-275.
3. "Mutasythesis of medicinally important natural products through manipulation of gene governing starter unit" D. Sharma, S. K. Yousuf, **Debaraj Mukherjee***. **Nat. Prod. Med. Chem.** 2010, 368-391
4. "Importance and synthesis of benzannulated medium-sized and macrocyclic rings (BMRs)" A. Hussain, S. K. Yousuf and **Debaraj Mukherjee***. **RSC Advances**, 2014, 4, 43241-43257.
5. "RN01582, 5, 6, 7, 8-Tetrafluoro -1,4 -dihydro-2,9-dimethyl-1,4 ethen onaphthalene"**Debaraj Mukherjee**. **Encyclopedia of Reagents for Organic Synthesis**. (doi:10.1002/047084289X.rn01582).
6. 'Advances in C-alkynylation of sugars and its application in organic synthesis' Madhu Babu Tatina, Altaf Hussain, Ashutosh K. Dash and **Debaraj Mukherjee***. **RSC Advances** 2016, 6,75960-75972.

Invited Lectures

- **Invited Lecture** on 'Advances in C-glycosylation and their application in organic synthesis' at University of Delhi (Carbo Conference XXXI) 14th November **2016**
- **Invited Speaker & Chairperson** on 'Medicinal Chemistry of C-glycosides' at J&K science Congress Jammu University on 2-4 March 2017.
- **Defended successfully SERB EMR** at IISER Bhopal on 16th November DST-PAC.

- **Invited Lecture** on ‘DOS of bioactive natural products from Carbohydrate chiral pool and Development of novel methodologies’ at Centre for Biomedical Research Lukhnow on 28th March **2014**
- **Plenary Lecture** on “Advances of multicomponent-one pot reactions in carbohydrate chemistry: scopes and limitations” at Bhavnagar University, Gujrat (XXIII Carbohydrate conference) on 22-24 Jan **2009**
- **Invited Lecture** on “Enhanced bioactivity of natural product from carbohydrate modification” at IICB Kolkata, on Feb **2009**
- Defended **DST project** “Novel reactions in carbohydrate chemistry for achieving the synthesis of anticancer agents” in front of experts **at IIT-Guwahati** on 16th **March 2013** in a workshop
- **Oral presentation** on “Medicinal Chemistry of Dihydropyran based Macrolides derived from carbohydrates: Selective Inhibition of PI3K α ” in 27th **ICS-2014**, IISc. Bangalore in international symposium
- Defended Research Council meeting at IIIM Jammu from 2007 onwards almost every year.

Patents

1. **New methods of β -c-aryl-mannosylation and its application in the synthesis of gliflozins and bioactive natural products. 2017 as principle inventor**
2. **Indolylojyl derivatives as inhibitor of invasion and metastasis in human mammary gland carcinomas. 2016 (application number 201711022402) as principle inventor**