

### List of 10 best Publications\_CH. RAJI REDDY

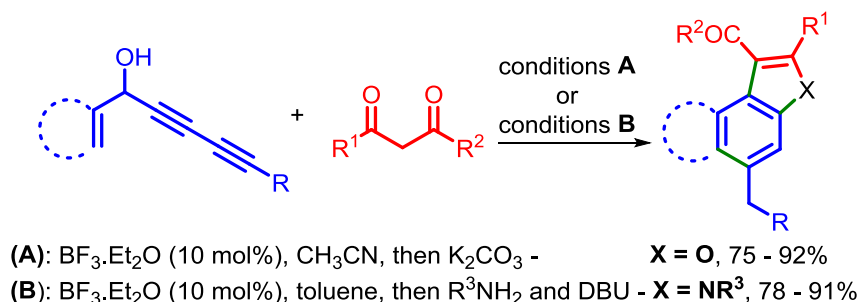
S No	Authors	Title	Journal
1	<b>Chada Raji Reddy*</b> Mounika Aila, Muppidi Subbarao, Kamalkishor Warudikar, and René Grée	Domino Reaction of 2,4-Diyn-1-ols with 1,3-Dicarbonyl Compounds: Direct access to Aryl/heteroaryl-Fused Benzofurans and Indoles	Organic Letters <b>2021</b> , 23, 4882-4887
2	<b>Chada Raji Reddy*</b> and Amol D. Patil	Iodo- and Chalcogeno-Annulation of Morita-Baylis-Hillman Alcohols of Propiolaldehydes: Entry to Functionalized 2-pyrones	Organic Letters <b>2021</b> , 23, 4749-4753
3	<b>Ch. Raji Reddy,*</b> Subbarao M., Sathish P., D. H. Kolgave and R. R. Donthiri	One-pot assembly of 3-hydroxycarbazoles via uninterrupted propargylation/hydroxylative benzannulation reactions	Organic Letters <b>2020</b> , 22, 689
4	<b>Ch. Raji Reddy*</b> Amol D. Patil and Siddique Z. Mohammed	Oxa-[3+3] annulation of MBH-carbonates of propiolaldehydes with $\alpha$ -nitro/bromo ketones to access 2H-pyrans	Chemical Communication <b>2020</b> , 56, 7191
5	<b>Ch. Raji Reddy*</b> Ravi Ranjan and Santosh Kumar Prajapati	Copper-Catalyzed intramolecular chalcogenoamination of enynyl azides: Synthesis of 5-selenyl/sulfenyl nicotines	Organic Letters <b>2019</b> , 21, 623
6	<b>Ch. Raji Reddy*</b> and Kathe Mallesh	Rh(III)-Catalyzed cascade annulations to access isoindolo[2,1-b]isoquinolin-5(7H)-ones via C-H activation: Synthesis of rosettacin	Organic Letters <b>2018</b> , 20, 150
7	<b>Ch. Raji Reddy,*</b> Uredi Dilipkumar and Ravula Shravya	Atom- and pot-economical consecutive multi-step reaction sequence to poly aromatic hydrocarbons (PAHs)	Chemical Communication <b>2017</b> , 53, 1904
8	<b>Ch. Raji Reddy,*</b> Sujatarani A. Panda and Motatipally Damoder Reddy	Aza-annulation of enynyl azides: A new approach to substituted pyridines	Organic Letters <b>2015</b> , 17, 896
9	<b>Ch. Raji Reddy,*</b> Uredi Dilipkumar and	A novel [4+2]-benzannulation to access substituted benzenes,	Organic Letters <b>2014</b> , 16, 3792

	Motatipally Damoder Reddy	polycyclic aromatic and benzene-fused heteroaromatic compounds	
10	<b>Ch. Raji Reddy,*</b> Uredi Dilipkumar, M. Damoder Reddy and Nagavaram	Total synthesis and revision of the absolute configuration of seimatopolide B	Org. Biomol. Chem. <b>2013</b> , <i>11</i> , 3355

### Highlights of 10 best Publications

#### 1) Domino Reaction of 2,4-Diyn-1-ols with 1,3-Dicarbonyl Compounds: Direct access to Aryl/heteroaryl-Fused Benzofurans and Indoles

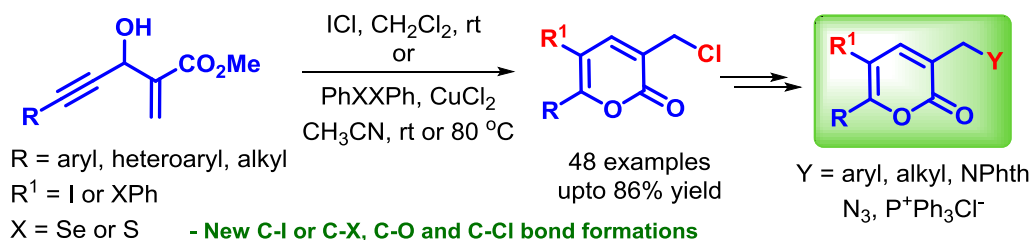
A domino propargylation/furanylation (pyrrolylation)/benzannulation reaction of 2,4-diyn-1-ols with 1,3-dicarbonyl compounds has been developed for the first time. This provides a novel and effective method for the preparation of aryl/heteroaryl-fused benzofurans from easily accessible starting materials in a single step. The overall process involves uninterrupted propargylation, intramolecular *exo-dig*-cyclization followed by benzannulation reactions. The methodology was extended to pyrrolyl-benzannulation to obtain aryl/heteroaryl-fused indoles. Further, application of this approach in the synthesis of eustifoline D and dictyodendrin structural frameworks has been demonstrated.



Organic Letters; **2021**, *23*, 4882-4887

#### 2) Iodo- and Chalcogeno-Annulation of Morita-Baylis-Hillman Alcohols of Propiolaldehydes: Entry to Functionalized 2-pyrones

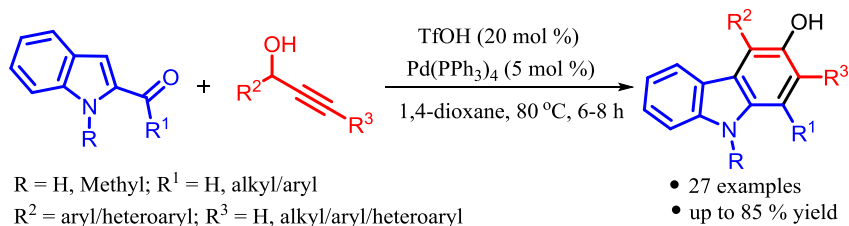
An efficient intramolecular annulation of Morita-Baylis-Hillman (MBH) alcohols of propiolaldehydes is developed in the presence of  $\text{ICl}$  or  $\text{PhSeSePh/PhSSPh-CuCl}_2$ . This cyclization offers access to a wide variety of iodinated or chalcogenated 3-(chloromethyl)-2-pyrones in good yields. The chloromethyl group of the obtained 2-pyrones has been easily converted to introduce other handy functionalities, which allowed for further transformations to synthesize diverse 2-pyrone containing molecules.



Organic Letters, 2021, 23, 4749-4753

### 3) One-pot Assembly of 3-Hydroxycarbazoles via Uninterrupted Propargylation/Hydroxylyative Benzannulation Reactions

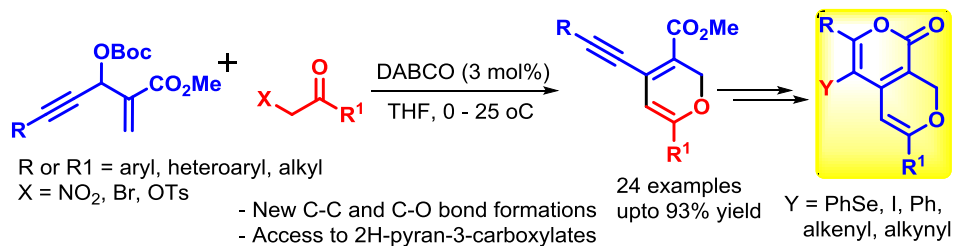
The synthesis of 3-hydroxycarbazoles by one-pot consecutive reactions of propargylic alcohols with indole-2-carbonyls has been established involving palladium-catalyzed hydroxylyative benzannulation as the key step. The developed protocol provides access to important di-versely substituted 3-hydroxycarbazoles in good to excellent yields. The method was further extended to use 2,4-diyn-1-ols in the reaction, which favored another cyclization to obtain the diannulated products, furanocarbazoles. Broad substrate scope and mild reaction conditions are the attractive features to make the present method valuable.



Organic Letters 2020, 22, 689

### 4) Oxa-[3+3] Annulation of MBH-Carbonates of Propiolaldehydes with $\alpha$ -Nitro/Bromo Ketones to Access 2H-Pyrans

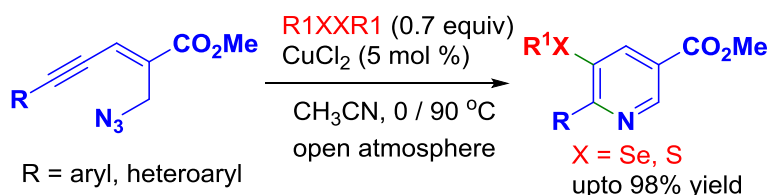
We have developed an unprecedented alkyne-assisted metal-free oxa-[3+3] annulation, which allowed accessing structurally diverse 2H-pyrans in good yields. The reaction is general for a broad range of MBH-carbonates of propiolaldehydes with  $\alpha$ -nitro/bromo ketones. The alkyne functionality of the obtained 2H-pyran-3-carboxylates further enables the subsequent transformations towards the synthesis of alkynyl furan and various pyranopyrones.



Chemical Communication 2020, 56, 7191

### 5) Copper-Catalyzed Intramolecular Chalcogenoamination of Enynyl Azides: Synthesis of 5-Selenyl/Sulfenyl Nicotines

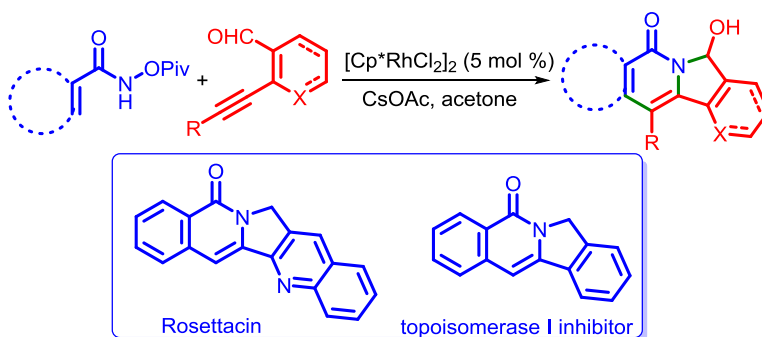
The wide spread popularity of chalcogenyl compounds is due their prominence in both medicinal and material chemistry. In particular, the synthesis of selenyl/sulfenylpyridine derivatives has been a fascinating area due to the pharmaceutical significance of these compounds. This manuscript described the synthesis of 5-selenyl/sulfenyl nicotinates through intramolecular chalcogenoamination of enynyl azides using Cu(II) as a catalyst. This is the first one-pot synthetic protocol that installs the selenyl/sulfenyl group on the pyridine during the ring construction.



*Org. Lett.* 2019, 21, 623-626

### 6) Rh(III)-Catalyzed Cascade Annulations To Access Isoindolo[2,1-b]isoquinolin-5(7H)-ones *via* C–H Activation: Synthesis of Rosettacin

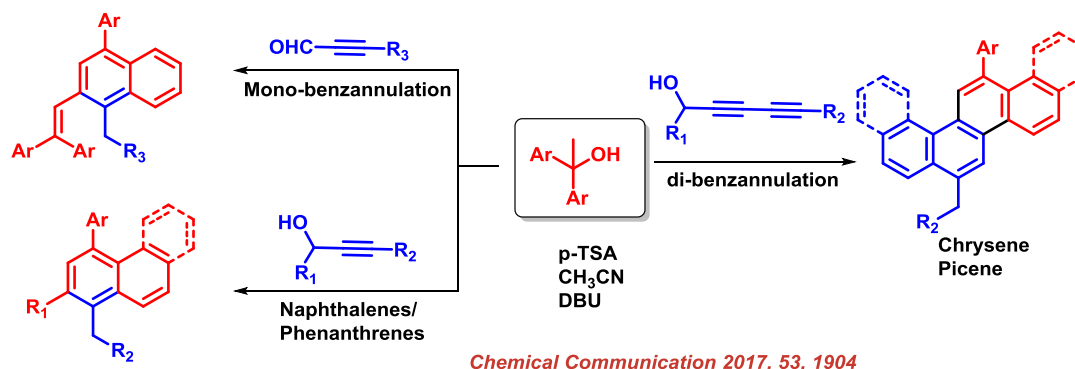
Indolizin-5(3H)-one motif is present in various natural products and these compounds exhibit a wide range of applications in medicinal chemistry. We developed a one-pot efficient method for the synthesis of 7-hydroxyisoindolo[2,1-b]isoquinolin-5(7H)-ones from N-(pivaloyloxy)amides and 2-alkynyl aldehydes by Rh(III)-catalyzed C–H functionalization. The present reactions are first examples of cascade Rh(III)-catalyzed alkyne insertion/intramolecular amide nitrogen addition to aldehydes. The synthetic utility of the developed method was demonstrated by rosettacin, topoisomerase I inhibitor.



*Org. Lett.* 2018, 20, 150

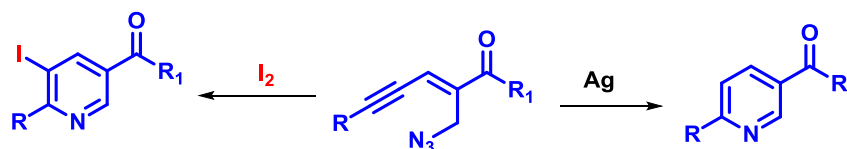
### 7) Atom- and Pot-Economical Consecutive Multi-Step Reaction Sequence to Poly Aromatic Hydrocarbons (PAHs)

We have developed novel one pot for the synthesis of substituted polycyclic aromatic hydrocarbons (PAHs) from the direct coupling of propargylic aldehydes/alcohols with 1,1-diarylethanol through an atom-economical uninterrupted three/ four-step reaction sequence under mild and metal-free reaction conditions. There are no examples in the literature neither for the direct coupling of propargylic aldehyde with 1,1-diarylethanol (or alkene) to ene–ynes nor for the cycloisomerization of 1,4-ene-yne to PAHs. The developed strategy proved to be effective for the rapid construction of various polycyclic aromatic hydrocarbons such as chrysene, picene, benzopicene and phenanthrocarbazole through the dibenzannulation reaction.



### 8) Aza-Annulation of Enynyl Azides: A New Approach to Substituted Pyridines

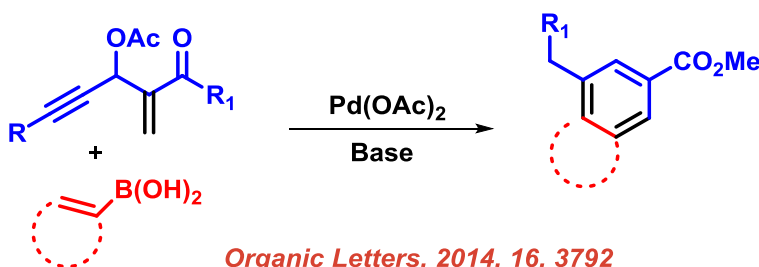
Pyridine motif is ubiquitous in many natural products and bioactive molecules. The present work provides an easy access substituted pyridines via aza-annulation of enynyl azides derived from MBH-acetates of acetylenic aldehydes. The Ag-catalyzed reaction is regioselective and provided pyridine-3-carboxylates. The I<sub>2</sub>-promoted annulation depending on the nature of substituent provided either iodopyridine or acyl-pyrrole as product. The present work provides new access to structurally diverse nicotinate (pyridine-3- carboxylate) derivatives which constitute an important group of biologically and pharmaceutically relevant molecules. Additionally, the iodopyridine products are useful for elaboration to new molecular entities



*Organic Letters 2015, 17, 896*

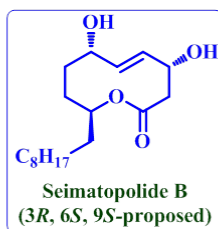
### 9) A novel [4+2]-benzannulation to access substituted benzenes, polycyclic aromatic and benzene-fused heteroaromatic compounds

Heterocycles are important structural motifs because of their presence in many bioactive natural products and most of the drugs. A general strategy for the synthesis of substituted benzenes, polycyclic aromatic hydrocarbons, as well as benzenefused heterocycles has been developed, starting from the reaction of MBH acetates of acetylenic aldehydes with aryl/heteroaryl or vinyl boronic acid. The potential use of MBH acetates of acetylenic aldehydes as a C4- synthon was demonstrated in the construction of benzene ring through a [4 + 2]-annulation involving tandem allylic substitution/hydroarylation cycloisomerization reactions. This method paves the way for the facile synthesis of substituted benzenes, naphthalenes, other polycyclic aromatics, and various benzenefused heteroaromatic compounds such as benzofuran, benzothiophene, indole, and carbazoles.



#### 10) Total synthesis and revision of the absolute configuration of seimatopolide B

We have successfully revised and synthesised the seimatopolide B macrolide including its enantiomer starting from easily accessible 5-hexen-1-ol and 3-buten-1-ol with 4.2% overall yield and Jacobson hydrolytic kinetic resolution, proline-catalyzed  $\alpha$ -hydroxylation, Yamaguchi esterification and ring-closing metathesis were the key reactions in this synthesis. The specific optical rotations of the synthesized compound and the natural product displayed opposite signs. This observation supports the misassignment of the absolute configuration for the natural product, which was further confirmed through the total synthesis of the enantiomer. These results suggest that the absolute configuration of the natural product should be 3*S*, 6*R*, 9*R*, which is in accordance with the natural product revised data. Key features of the synthetic approach are: (i) generation of the desired absolute stereochemistry through the Jacobson epoxide resolution and proline-catalyzed asymmetric  $\alpha$ -hydroxylation, (ii) construction of the macrocyclic framework using Yamaguchi esterification and ring-closing metathesis reactions, which were readily adapted to obtain the natural enantiomer



*Org. Biomol. Chem.*, 2013, 3355-3364

#### List of Best Three Patents:

- 1) *Indole (sulfomyl) N-hydroxy benzamide derivatives as selective HDAC inhibitors*, Chandrasekhar, S.; Mainkar, P. S.; **Raji Reddy, Ch.**; Srigiridhar, K.; Pavan Kumar, T.; Subbarao M. M. V.; Somesh, S.; Ashok, J.; Premkumar, A. Patent No. WO **2019/102488** A1.
- 2) Chandrasekhar, S.; Shiva Krishna, A.; **Raji Reddy, Ch.**; Sudhakar, G.; Kumaraguru, T.; Srihari, P.; Mainkar, P. S.; Rajesh, N. and Subhash Ghosh, *Chemo-Enzymatic Process For The Preparation of Eribulin Intermediates* IN20190019NF2019, **2019**.
- 3) **Raji Reddy, Ch.**; Amol D. Patil.; Subbarao, M.; Nagender, P.; Ramachandra Reddy, D.; Singh, Ajay; Prathama Mainkar; Chandrasekhar, S.; Rajamannar, T. *A Process For Preparation of 3,6-Dichlorocyano Pyrazine, 3,6-Dioxopiperazine Derivatives and Production Of Favipiravir Thereof* (Application Number: 202011024682 filed on 12<sup>th</sup> June, 2020)