

Supporting Information

Org. Commun. 5:2 (2012) 42-49

Iminium salt mediated nitro decarboxylation of α , β -unsaturated acids for the synthesis of β -nitro styrenes under non-conventional conditions

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Table of contents	Page
Table S1. Nitro decarboxylation of Cinnamic Acids under Vilsmerier Haack Conditions	2
Table S2. Nitro decarboxylation of Cinnamic Acids under Vilsmerier Haack Conditions	3

Table S1. Nitro decarboxylation of Cinnamic Acids under Vilsmerier Haack Conditions

VHR = (DMF + SOCl₂); SOLVENT = Acetonitrile

Entry	α, β -unsaturated carboxylic acid	Thermal (Room temp)		Sonication (Room temp)		Grinding (Solvent free)		Microwave (300 watt) (Solvent free)									
		KNO ₃		NaNO ₂		KNO ₃		KNO ₃		NaNO ₂							
		R.T (h)	Yield (%)	R.T (h)	Yield (%)	R.T min	Yield (%)	R.T min	Yield (%)	R.T (Sec)	Yield (%)	R.T (Sec)	Yield (%)				
1	CA	14	74	15	72	90	72	90	68	60	75	60	70	200	78	240	70
2	4-Cl CA	14	64	15	60	90	60	90	55	60	65	60	60	210	66	260	62
3	4-OMe CA	14	75	15	72	90	74	90	70	60	78	60	75	180	85	200	80
4	4-Me CA	14	72	15	70	90	70	90	66	60	74	60	70	180	75	220	70
5	4-NO₂ CA	16	60	16	56	90	60	90	55	60	62	60	58	240	64	260	62
6	4-OH CA	14	76	15	74	90	72	90	70	60	78	60	70	200	82	220	75
7	AA	15	65	16	60	90	62	90	55	60	65	60	60	250	70	300	64
8	CRA	15	66	16	62	90	60	90	56	60	65	60	60	240	72	300	68
9	2-Me CA	15	70	16	64	90	65	90	60	60	70	60	66	230	75	260	66
10	2-Cl CA	15	62	16	56	90	60	90	56	60	65	60	60	240	74	280	62

Table S2. Nitro decarboxylation of Cinnamic Acids under Vilsmerier Haack Conditions

VHR = (DMF + POCl₃); SOLVENT = Acetonitrile

Entry	α , β -unsaturated carboxylic acid	Thermal (Room temp)				Sonication (Room temp)				Grinding (Solvent free)				Microwave (300 watt) (Solvent free)			
		KNO ₃		NaNO ₂		KNO ₃		NaNO ₂		KNO ₃		NaNO ₂		KNO ₃		NaNO ₂	
		R.T (h)	Yield (%)	R.T (h)	Yield (%)	R.T min	Yield (%)	R.T min	Yield (%)	R.T min	Yield (%)	R.T min	Yield (%)	R.T (Sec)	Yield (%)	R.T (Sec)	Yield (%)
1	CA	14	78	15	75	75	75	75	70	50	76	50	72	200	86	230	80
2	4-Cl CA	13	72	14	70	75	72	75	70	50	74	50	72	210	82	240	75
3	4-OMe CA	12	80	14	76	75	78	75	75	50	82	50	78	180	84	190	76
4	4-Me CA	12	74	14	72	75	72	75	68	50	75	50	70	180	76	210	74
5	4-NO₂ CA	15	64	15	60	75	62	75	58	50	68	50	62	240	70	260	65
6	4-OH CA	12	80	14	75	75	78	75	74	50	82	50	78	200	84	210	82
7	AA	14	68	15	62	75	65	75	58	50	70	50	66	250	72	280	70
8	CRA	14	65	15	62	75	64	75	58	50	68	50	65	240	72	300	62
9	2-Me CA	14	70	15	65	75	66	75	64	50	72	50	68	230	75	240	68
10	2-Cl CA	14	65	16	60	75	64	75	60	50	68	50	62	240	70	260	64