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Photoresponsive polymers based on coumarin moiety for the controlled release of pesticide 2,4-D

Sanghamitra Atta, Amrita Paul, Rakesh Banerjee, Manoranjan Bera, Mohammed Ikbal, Dibakar Dhara and N. D. Pradeep Singh**

Department of Chemistry, Indian Institute of Technology Kharagpur, Kharagpur–721302, India.

Phone: (+) 91-3222-282324; Fax: (+) 91-3222-282252

E-mail: ndpradeep@chem.iitkgp.ernet.in

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NMR spectra of monomer 2a and polymers 3a–3b

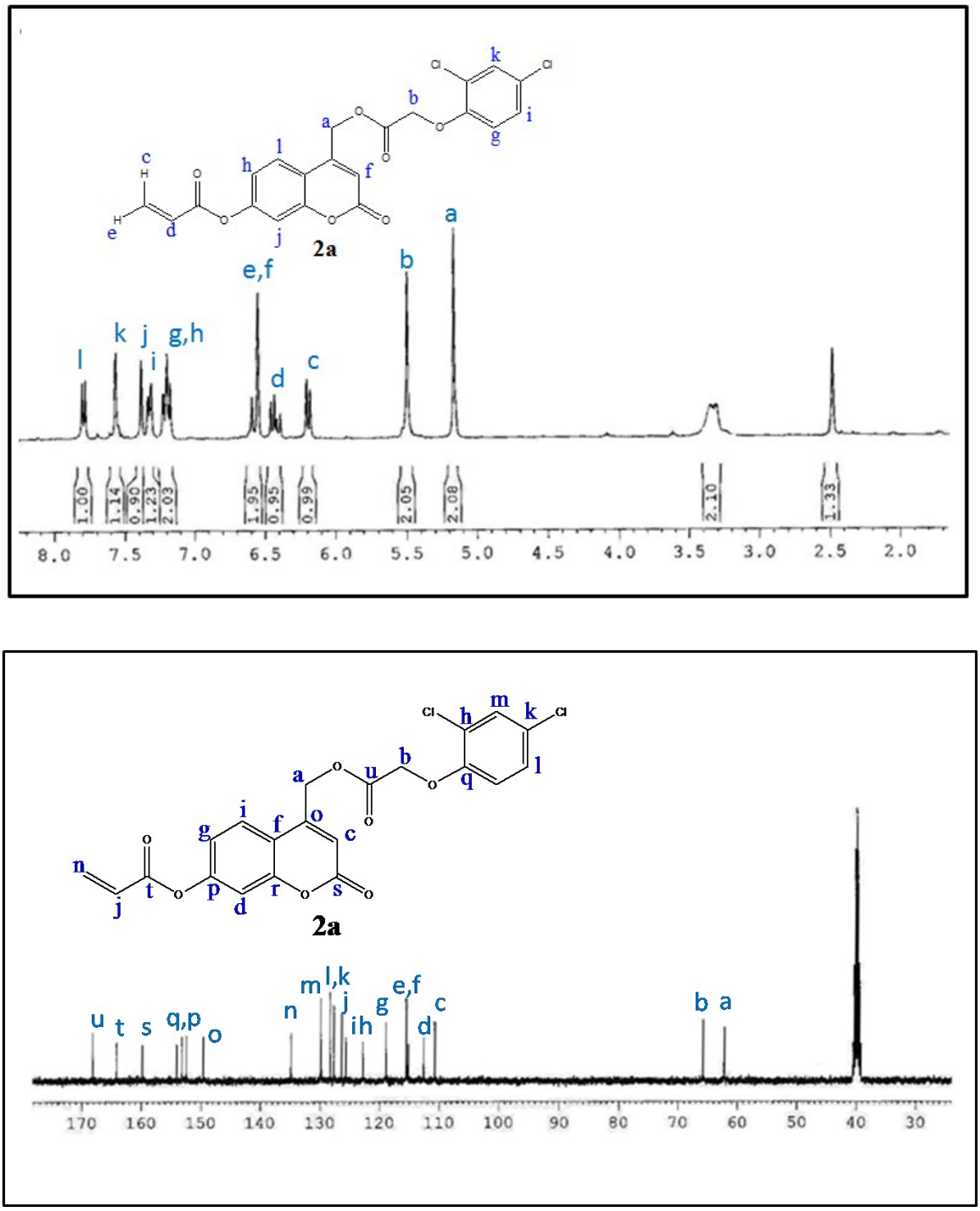

Fig. S1: ^{1}H and ^{13}C NMR spectra of monomer 2a

Polymer 3a

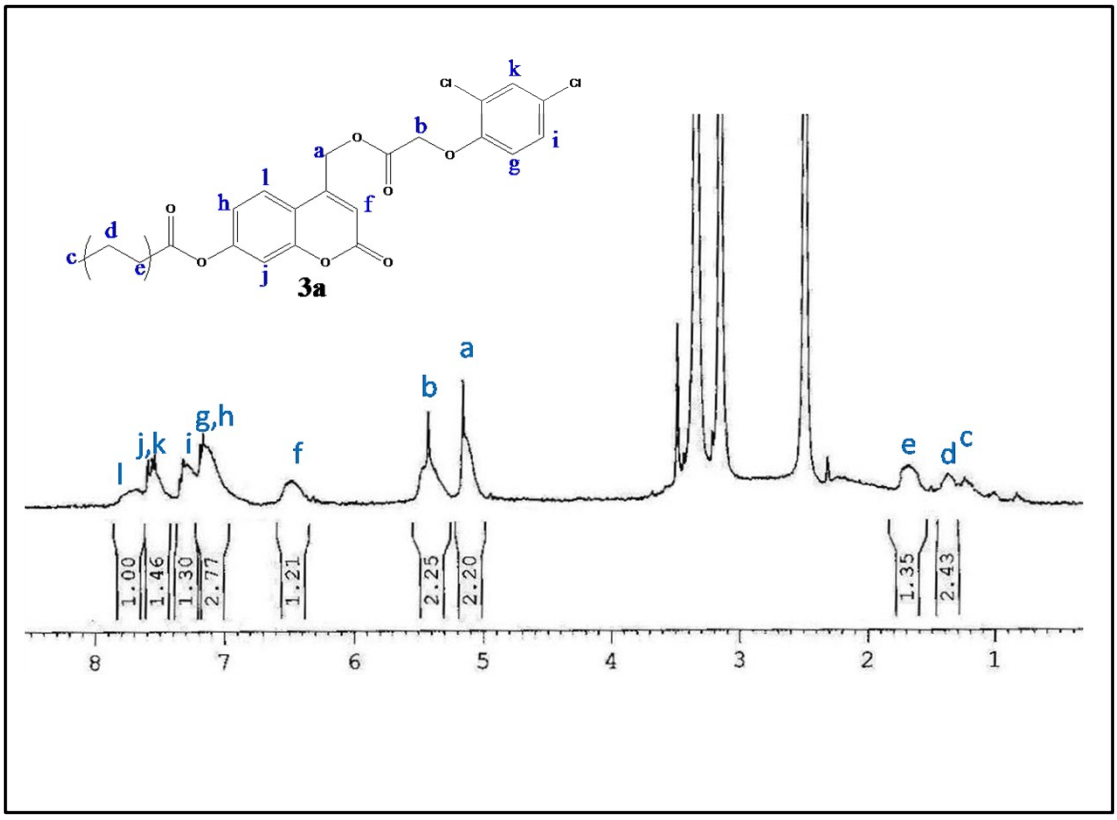

Fig. S2: ^{1}H NMR spectrum of polymer 3a

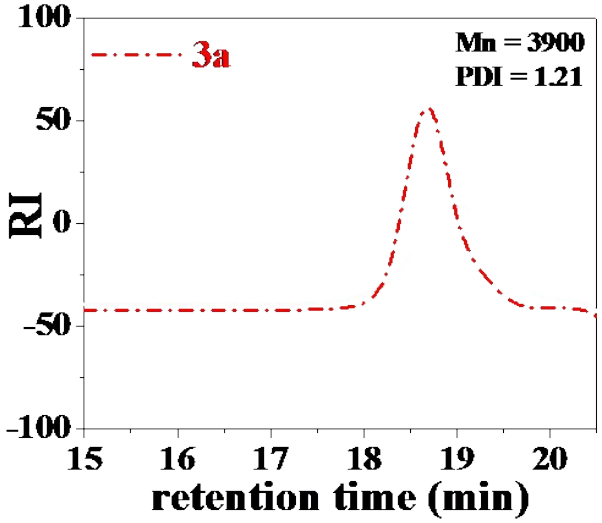

Fig. S3 GPC data of acrylate based coumarin–2,4-D polymer (**3a**)

Polymer 3b

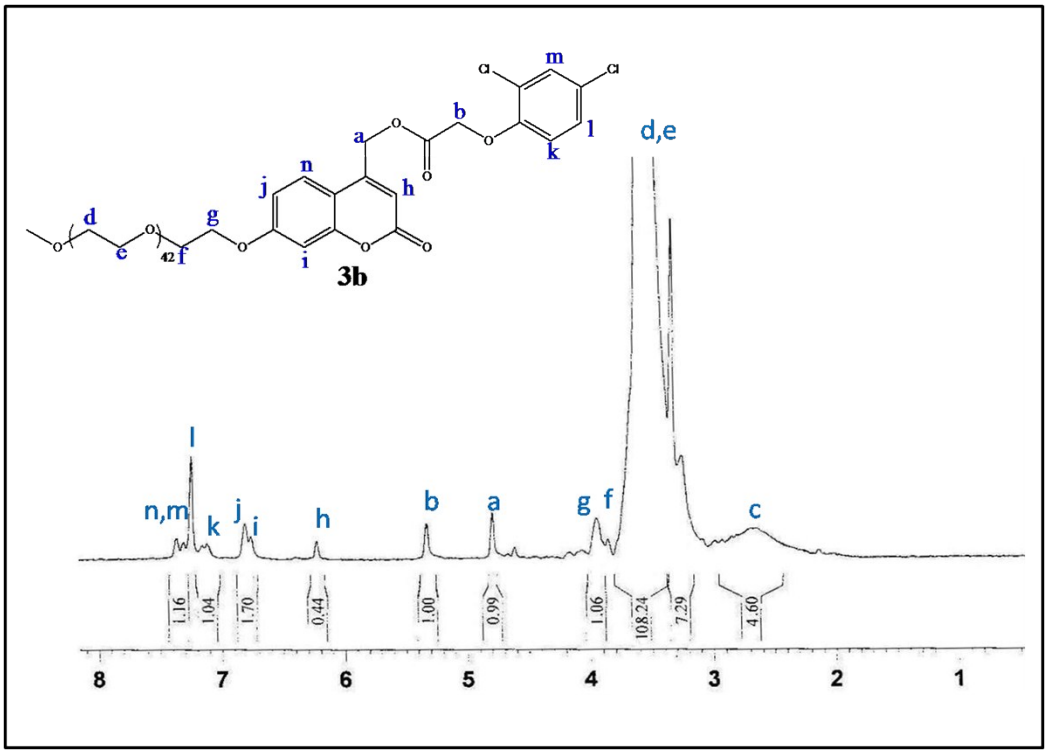

Fig. S4: [1]H NMR spectrum of polymer 3b.

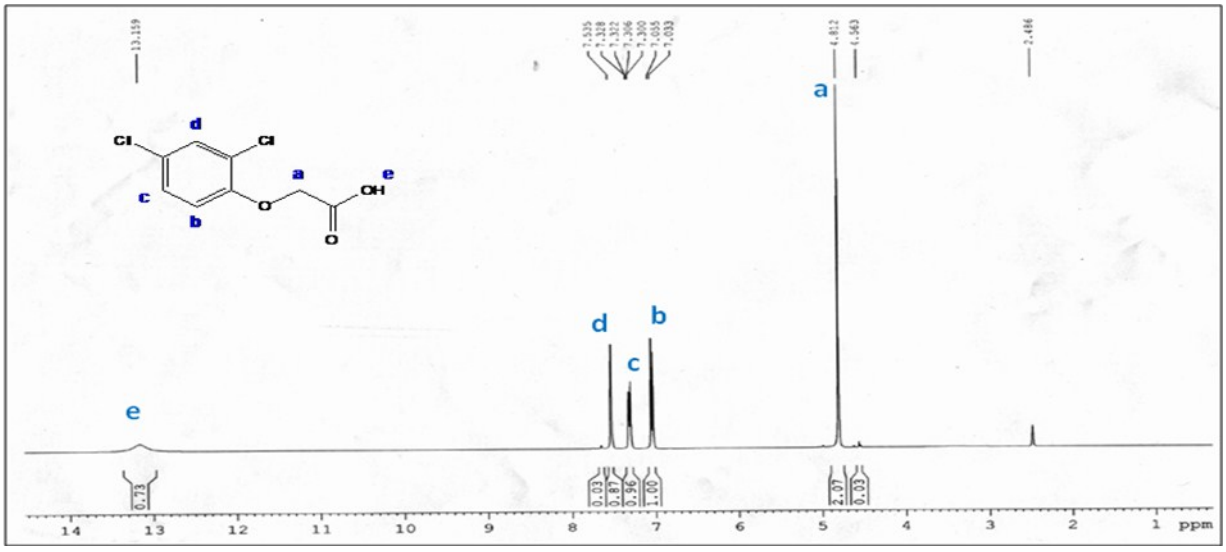

Fig. S5: [1]H NMR spectrum of 2,4-D.

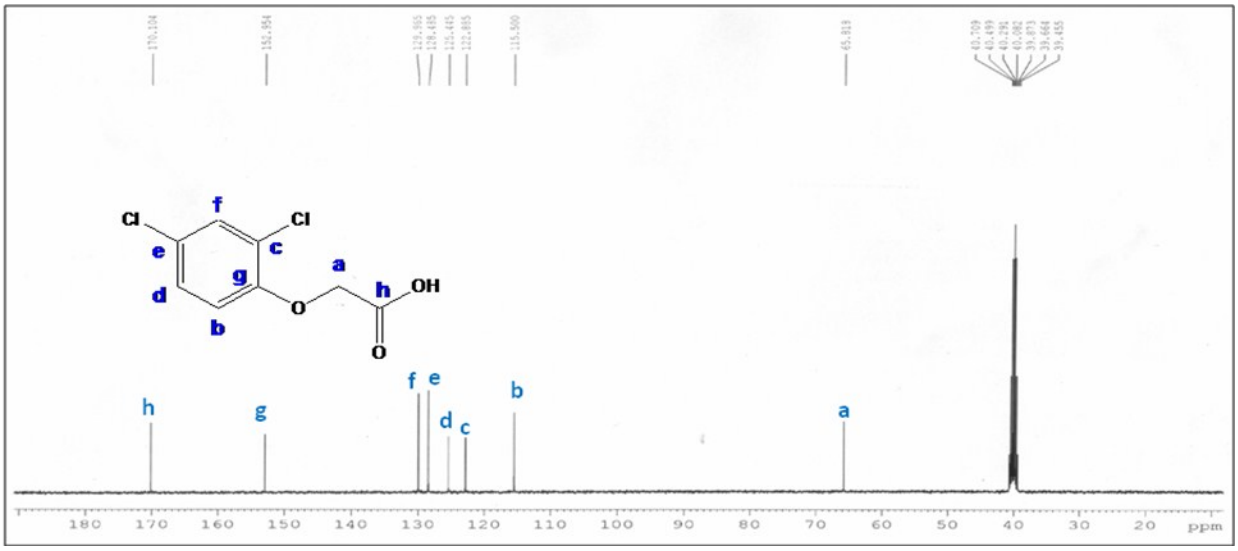

Fig. S6: ^{13}C NMR spectrum of 2,4-D.

Table S1: Effect of 2, 4-D, and coumarin–2,4-D polymers **(3a–b)** on root length of pumpkin plant (*C. maxima*). Values are mean ±SE of 3 replicates.

Comp. conc. (M)		Root length (cm)				
		Culture period (days)				
		2	4	6	8	10
Control		3.5±0.13^{g}	5.6±0.18^{h}	8.9±0.21^{h}	11.3±0.44^{h}	14.6±0.42^{e}
24D	10^{-4}	1.0±0.05^{a}	1.2±0.08^{a}	1.2±0.10 ^{a}	1.2±0.10 ^{a}	-
	10^{-5}	1.1±0.13^{a}	1.3±0.16^{b}	1.5±0.25 ^{b}	1.5±0.28 ^{b}	-
	10^{-6}	1.3±0.12^{b}	1.8±0.18 ^{c}	2.5±0.16 ^{e}	3.1±0.30 ^{d}	3.1±0.35^{a}
	10^{-7}	2.3±0.09^{e}	3.3±0.11^{g}	4.1±0.29 ^{g}	5.3±0.22 ^{g}	6.0±0.35^{d}
3a	10^{-4}	1.0±0.10^{a}	1.1±0.12 ^{a}	1.1±0.18 ^{a}	-	-
	10^{-5}	1.5±0.11^{c}	1.8±0.23 ^{c}	2.0±0.09 ^{d}	2.0±0.24^{c}	-
	10^{-6}	1.8±0.14^{d}	2.6±0.15^{d}	2.8±0.31 ^{ef}	3.2±0.35 ^{d}	3.2±0.29 ^{a}
	10^{-7}	2.5±0.15^{f}	3.0±0.14^{f}	3.6±0.26 ^{f}	4.1±0.25 ^{e}	4.9±0.34^{bc}
3b	10^{-4}	1.1±0.03^{a}	1.2±0.22 ^{b}	1.2±0.22 ^{b}	-	-
	10^{-5}	1.1±0.03^{a}	1.3±0.05 ^{a}	1.7±0.19 ^{c}	1.7±0.19^{bc}	-

	10^{-6}	1.4±0.10[b]	2.7±0.19 [d]	3.9±0.24 [f]	4.2±0.19 [e]	4.7±0.17[b]
	10^{-7}	2.0±0.14[d]	2.9±0.14[e]	4.0±0.20 [fg]	4.8±0.20 [f]	5.0±0.28 [c]

Means in each column followed by the different letters shows significant difference (P ≤0.05) as determined by Duncan's multiple range test.

Table S2: Effect of 2, 4-D, and coumarin–2,4-D polymers **(3a–b)** on shoot length of pumpkin plant (*C. maxima*). Values are mean ±SE of 3 replicates.

Comp. conc. (M)		Shoot length (cm)				
		Culture period (days)				
		2	4	6	8	10
Control		4.45±0.15[f]	7.12±0.25[h]	9.15±0.36[j]	10.11±0.2[h]	13.8±0.47[g]
24D	10^{-4}	-	0.8±0.04 [a]	1.1±0.15 [a]	-	-
	10^{-5}	-	1.0±0.11 [a]	2.5±0.23 [d]	2.5±0.12 [b]	-
	10^{-6}	2.85±0.14 [c]	3.31±0.15 [c]	4.89±0.29 [e]	6.89±0.33 [e]	7.10±0.36 [d]
	10^{-7}	3.15±0.08 [d]	4.90±0.15 [fg]	6.89±0.33 [i]	8.85±0.41 [g]	10.91±0.2[f]
3a	10^{-4}	-	1.0±0.13 [a]	1.0±0.13 [a]	-	-
	10^{-5}	-	1.54±0.25 [b]	2.12±0.14 [c]	2.12±0.18 [a]	-
	10^{-6}	2.55±0.11 [b]	3.0±0.19 [c]	4.46±0.16 [d]	5.8± 0.29 [c]	6.02±0.22 [a]
	10^{-7}	3.0±0.14 [cd]	3.9±0.21 [d]	5.89±0.22[g]	7.18±0.34 [f]	8.05±0.32 [f]
3b	10^{-4}	-	1.65±0.09 [b]	1.8±0.22 [b]	-	-
	10^{-5}	2.3±0.10 [a]	4.2±0.19 [e]	5.0±0.31 [f]	5.9±0.23 [cd]	6.34±0.26 [b]
	10^{-6}	2.4±0.10 [a]	4.7±0.19 [f]	5.3±0.31 [fg]	6.2±0.23 [d]	6.64±0.21[c]
	10^{-7}	3.32±0.08 [e]	5.98±0.25 [g]	6.1±0.35 [h]	7.33±0.38[fg]	7.83±0.38 [e]

Means in each column followed by the different letters shows significant difference (P ≤0.05) as determined by Duncan's multiple range test.