

**Supplementary Of Research progress of pesticide  
polymer-controlled release system based on  
polysaccharide**

Table S1 Symbol and abbreviations

| Symbol<br>/Abbreviations | Definitions   |
|--------------------------|---|
| Ac-Dex                   | acetalized dextran  |
| ALA-hydrogel             | alginate-lentinan-amino-oligosaccharide hydrogel  |
| AL-hydrogel              | alginate-lentinan drug-loaded hydrogel  |
| AVM                      | Avermectin  |
| BTDA                     | 3,3',4,4'-benzophenonetetracarboxylic dianhydride   |
| Ca-alginate              | alginate calcium  |
| CBZ                      | Carbendazim   |
| CdS                      | cadmium sulfide   |
| cl-Ch-pMAc               | poly (methacrylic acid) crosslinked chitosan  |
| CMC                      | carboxymethyl cellulose   |
| CMC-g-PDMAAC             | graft copolymer by electrostatic interaction, in which carboxymethyl cellulose and diallyldimethylammonium chloride as monomers         |
| CMC-g-PRSG               | nanocarriers are prepared from two compounds from natural materials from natural materials carboxymethyl cellulose (CMC) and rosin (RS) |
| CMS                      | Carboxymethyl starch  |
| CO                       | Chitosan oligomer   |
| CRR                      | cumulative release rate   |
| CS                       | chitosan  |
| CSAD                     | cholesteryl-grafted sodium alginate derivatives   |
| CVC                      | carvacrol   |
| DCMC                     | N,N-dimethylhexadecyl carboxymethyl chitosan  |
| DIN                      | dinotefuran   |
| DL                       | drug loading  |
| DMDAAC                   | diallyldimethylammonium chloride  |
| DMF                      | N,N-dimethylformamide   |
| EE                       | entrapment efficiency   |
| EVA                      | poly(ethylene-co-vinyl acetate)   |
| GC film                  | film based on guar gum incorporated with citral   |
| GE                       | gelatin   |
| GEL/Gel                  | gelatin   |
| GG                       | guar gum  |
| GG-g-PAA-PAAm            | guar gum grafted acrylic acid – acrylamide  |
| GG-HG                    | guar gum-g-cl-polyacrylate/bentonite hydrogel composite   |
| GG-NHG                   | guar gum-g-cl-PNIPAm nanohydrogel   |
| GSH                      | Glutathione   |
| H-CSAD-CaCl <sub>2</sub> | High molecular weight calcium chloride cholesterol grafted sodium alginate derivative   |
| HH                       | Hemp Hurd   |

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|                 |   |
|-----------------|---|
| HMS             | Hollow mesoporous silica  |
| HPC             | Hydroxypropyl cellulose   |
| HP- $\beta$ -CD | Hydroxypropyl--Cyclodextrin   |
| ID              | Iprodione   |
| IPP             | poly(ethylene glycol)-poly( $\epsilon$ -caprolactone)   |
| LNL             | linalool  |
| LNT             | Lentinan  |
| MCN             | Relevant quantity of MC, NHS, EDC was weighed by the ratio of 1:2:4 and dissolved in distilled water. After gently stirred for 1 h at 25 °C, the solid was vacuum filtered, washed with distilled water several times and dried under vacuum at 50 °C to get purified MCN |
| MDI             | methane-4,4'-diisocyanate   |
| MMT             | montmorillonite   |
| MW              | molecular weight  |
| NaCMC           | sodium carboxymethylcellulose   |
| NCT             | nicotine hydrochloride  |
| NH <sub>2</sub> | Amino   |
| NPs             | nanoparticles   |
| NSs             | nanosponges   |
| PAA-PAAm        | polyacrylic acid-polyacrylamide   |
| PCL             | poly( $\epsilon$ -caprolactone)   |
| PEC             | pectin  |
| PEG             | poly(ethylene glycol)   |
| PPy             | polypyrrole   |
| PSiSC           | polysiloxane sodium carboxylate   |
| PYR             | Pyraclostrobin  |
| P-Zein          | phosphorylated zein   |
| QDs             | quantum dots  |
| SA              | sodium alginate   |
| SCCA            | starch–chitosan–calcium alginate  |
| TDI             | toluene diisocyanate  |
| TMV             | tobacco mosaic virus  |
| TPP             | tripolyphosphate  |
| UV              | Ultraviolet   |
| ZnO             | Zinc oxide  |
| $\gamma$ NS-CDI | dextrin-based nanosponges synthesized with 1,1'-carbonyldiimidazole   |
| $\gamma$ -PGA   | poly- $\gamma$ -glutamic acid   |

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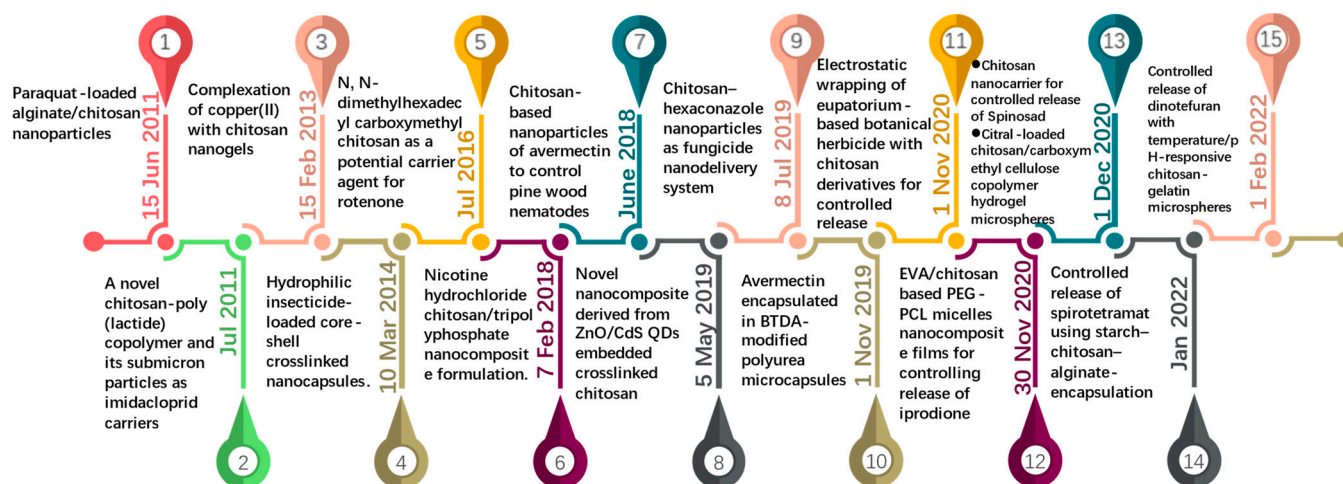


Figure S1 Development timeline of chitosan-based nanotechnology intelligent controlled release carrier system

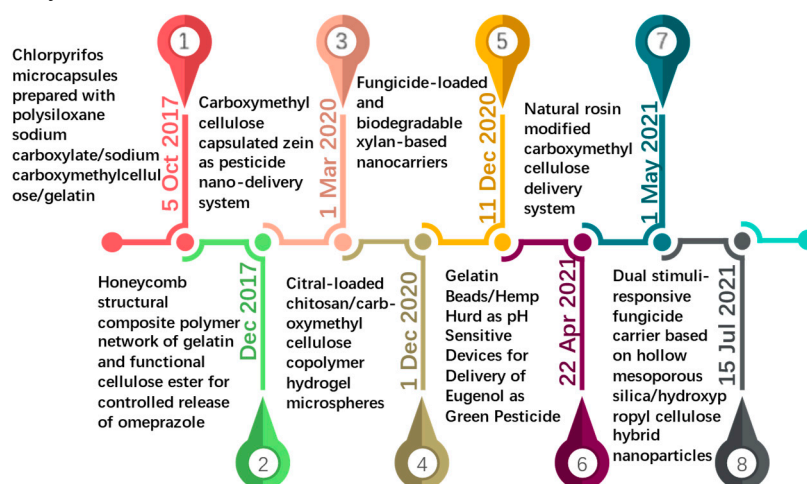


Figure S2 Development timeline of cellulose-based nanotechnology intelligent controlled release carrier system

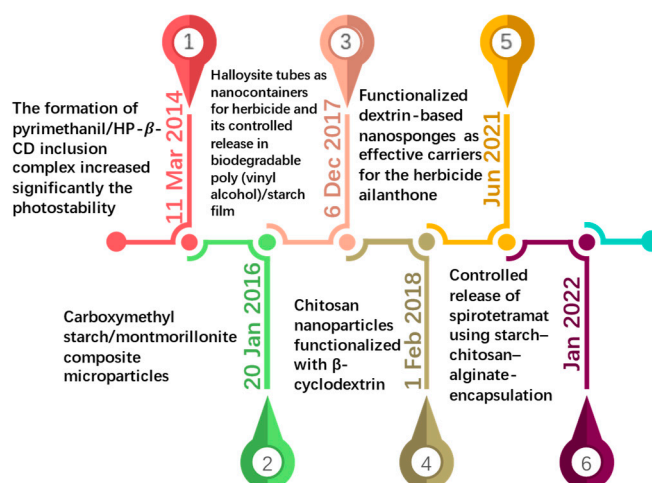


Figure S3 Development timeline of intelligent controlled release carrier system using starch or dextrin in nanotechnology.

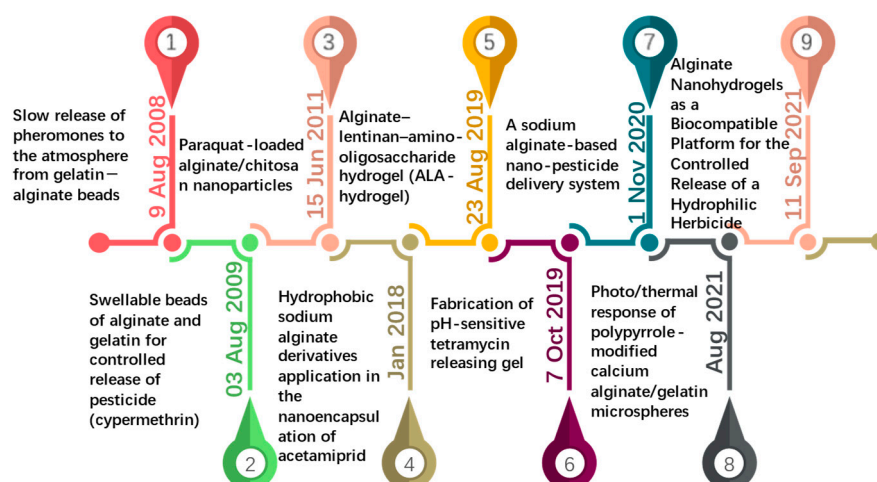


Figure S4 Development timeline of intelligent controlled release carrier system using alginic acid in nanotechnology.

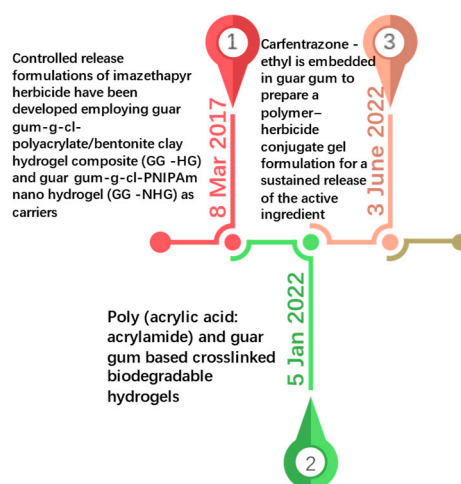


Figure S5 Development timeline of intelligent controlled release carrier system using Guar gum in nanotechnology.