

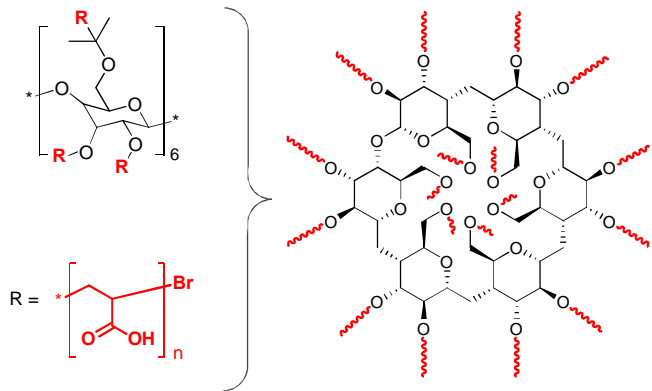
Sample Name:

Star-like Poly(Acrylic Acid) with α -Cyclodextrin core

Number of arms: 13 arms

Sample # **P20137A-13AA**

Structure:



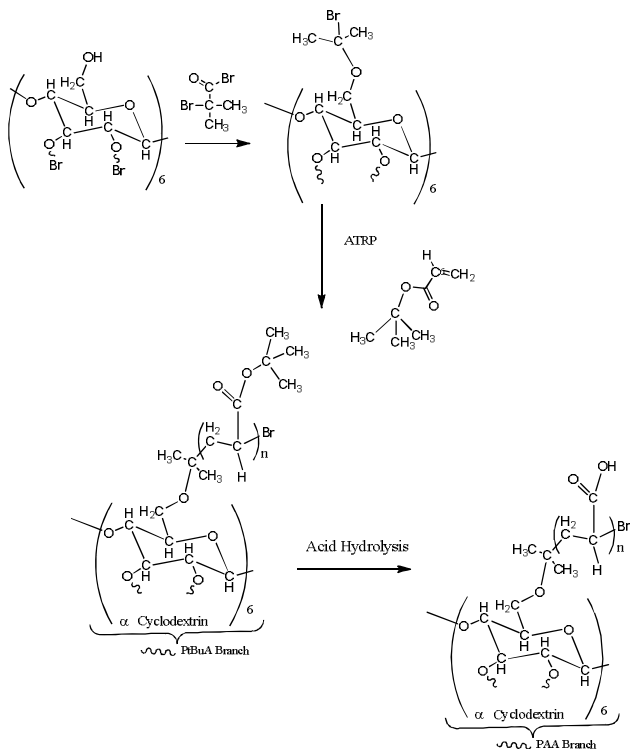
In star-like polymer that contains <18 arms, some R = H (hydrogen).

Composition:

Mn x 10 ³	PDI
Total: 70.0	1.25
Each branch: 5.5	-

Synthesis Procedure:

The polymer was synthesized by ATRP process:



Characterization:

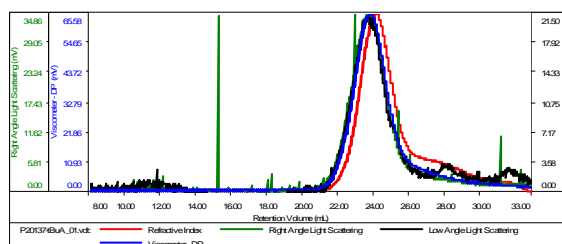
Molecular weight and polydispersity index were determined by size exclusion chromatography (SEC): The absolute molecular weight of the star-like polymer was determined by light scattering detector-Viscotek 270 model.

To analyze the molecular weight of the arms consisting of poly(tert-butyl acrylate) [PtBuA], the ester groups located between cyclodextrin and PtBuA block were cut by hydrolysis in the basic condition.

SEC elugram of PtBuA star polymer:

Sample ID: P20137-tBuA

Concentration (mg/mL)	25.6482
Sample dn/dc (mL/g)	0.0512
Method File	PS90K-NDV-2014-0003.vcm
Column Set	3x PL 1113-6300
Solvent	THF



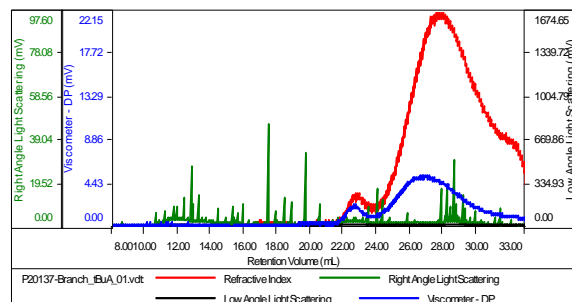
Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P20137-tBuA_01.vdt	123,850	155,675	159,556	1.257	0.1642

Poly(acrylic acid) after hydrolysis of t-butyl ester group:
Mn 70,000; Mw/Mn: 1.25

SEC elugram of PtBuA arm:

Sample ID: P20137-tBuA Branch

Concentration (mg/mL)	3.7916
Sample dn/dc (mL/g)	0.0850
Method File	PS90K-NDV-2014-0003.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P20137-Branch_tBuA_01.vdt	9,420	38,840	47,352	4.123	0.1570

Poly(acrylic acid) after hydrolysis of t-butyl ester group:
Mn 5,500