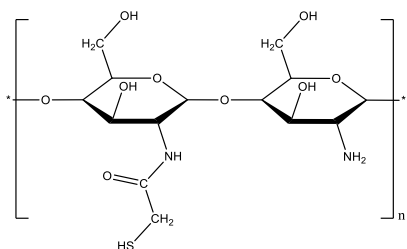


Sample Name:

Thiolated chitosan (thiolated with thioglycolic acid)

Sample #: P60759-TCS

Structure:

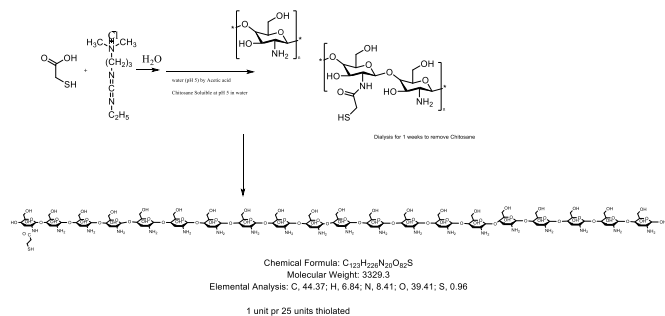


Composition:

Dynamic viscosity of native chitosan:	Degree of thiolation:
50–100 mPa·s, (0.5% in 0.5% Acetic Acid at 20°C)	0.5mol%

Synthesis procedure:

The thiolated chitosan was prepared from chitosan using thioglycolic acid and EDAC•HCl. A scheme of reaction is shown below.



Purification:

The obtained thiolated chitosan was extensively dialyzed through cellulose membrane (MW cut-off, 5000) against water containing 5 mM HCl and 1% NaCl. The product was filtered off and lyophilized (freeze-dried).

The recommended storage temperature: around 4°C.

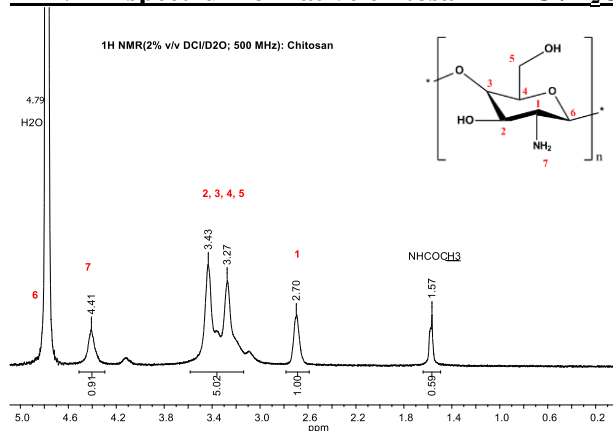
Characterization:

The product was analyzed by proton NMR and FT-IR spectroscopies. The degree of -SH functionalization was calculated from elemental analysis data.

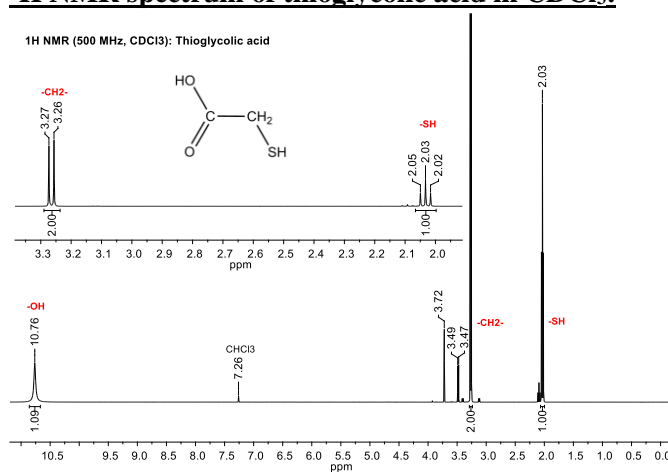
Solubility:

The polymer is soluble in water and aqueous hydrochloric acid solution and has a limited solubility in DMSO.

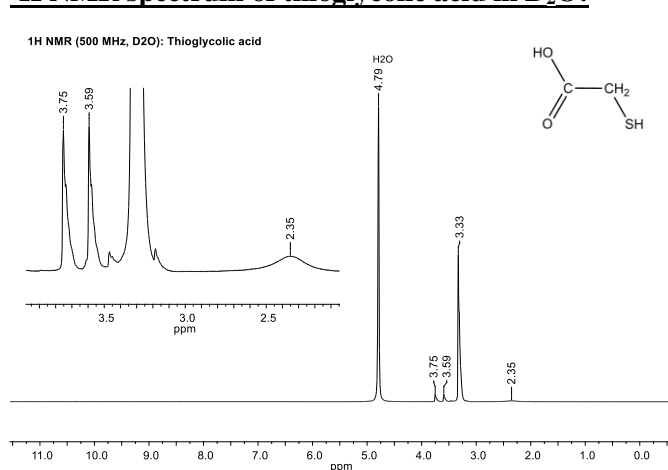
¹H NMR spectrum of native chitosan in DCl/D₂O:



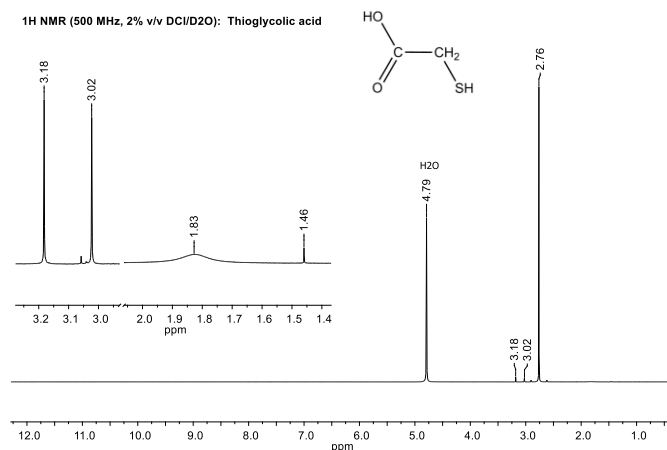
¹H NMR spectrum of thioglycolic acid in CDCl₃:



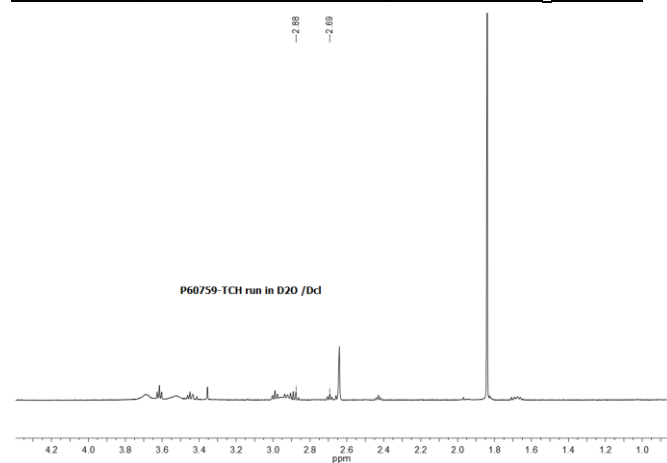
¹H NMR spectrum of thioglycolic acid in D₂O:



^1H NMR spectrum of thioglycolic acid in $\text{DCI}/\text{D}_2\text{O}$:

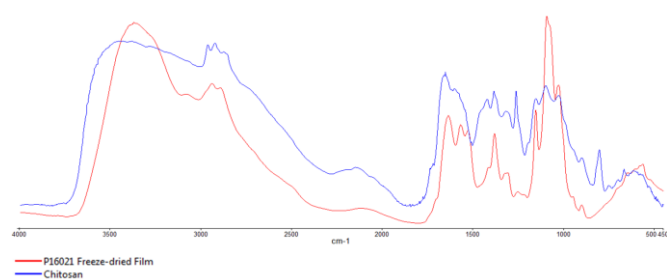


^1H NMR spectrum of P60759 product in $\text{D}_2\text{O}/\text{DCI}$:



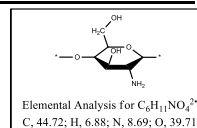
HNMR missing

R absorption spectra of native chitosan (blue curve) and thiolated chitosan (red curve):



Elemental analyses of native chitosan and P16021:

Identification de l'échantillon: CHITOSAN
Formule moléculaire: $\text{C}_6\text{H}_{11}\text{N O}_4$
Méthode utilisée: 160531E



Sample Name	% Nitrogen	% Carbon	% Hydrogen
POL1-1	7,41	41,14	6,88
POL1-2	7,31	41,12	6,88

	% Nitrogen	% Carbon	% Hydrogen
Moyenne	7,36	41,13	6,88
Théorie:	8,70	44,70	6,90

Report Number: 141088



	GLI Procedure ME-14	39.05 %	As Received	2.994 mg
H : Hydrogen	GLI Procedure ME-14	6.68 %	As Received	2.994 mg
N : Nitrogen	GLI Procedure ME-14	6.74 %	As Received	2.994 mg
S : Sulfur	GLI Procedure E16-3	0.626 %	As Received	29.115 mg