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## Total synthesis of alginate and zwitterionic SP1 oligosaccharides

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# **Total Synthesis of Alginate and Zwitterionic SP1 Oligosaccharides**

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**Where there is a will, there is a way!**

**有志者事竟成**

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## List of abbreviations

Ac	acetyl	eq	molar equivalents
ACN	acetonitrile	ESI	electrospray ionization
All	allyl	Et	ethyl
AIBN	2,2'-azobis(2-methyl-propionitrile)	GDP	Guanosine diphosphate
Arom	aromatic	Gla	glactose
aq.	aqueous	Gul	gulose
BAIB	[bis(acetoxy)iodo]benzene	h	hour
Bn	benzyl	HRMS	high resolution mass spectrometry
BOM	Benzyloxyl methyl	Hz	Hertz
bs	broad	HSQC	Heteronuclear single quantum coherence
BSP	1-benzenesulfinyl piperidine	IR	infrared spectroscopy
Bu	butyl	isoprop	isopropylidene
Bz	benzoyl	IC <sub>50</sub>	Inhibitor concentration resulting in half-maximal enzyme activity
cat.	catalytic	<i>J</i>	coupling constant
CEM	cyanoethylmethyl	LCMS	liquid chromatography mass spectrometry
ClAc	chloroacetyl	Lev	levulinoyl
Cq	quarternary carbon atom	m	multiplet
Cbz	benzyloxycarbonyl	MALDI	Matrix-associated laser Desorption/ionization
COSY	Correlation spectroscopy	Man	D-mannose
d	doublet	MannA	D-mannuronic acid
DBU	1,8-diazabicyclo[5.4.0]undec-7-ene	Me	methyl
DCM	dichloromethane	min	minute
DCE	1,2-dichloroethane	NAc	<i>N</i> -acetyl
dd	doublet of doublets	NBS	<i>N</i> -bromosuccinimide
DIBAL-H	di- <i>iso</i> -butylaluminium hydride	NCS	<i>N</i> -chlorosuccinimide
DiPEA	<i>N,N</i> -di- <i>iso</i> -propyl- <i>N</i> -ethylamine	NIS	<i>N</i> -iodosuccinimide
DMAP	4-dimethylaminopyridine		
DMF	<i>N,N</i> -dimethylformamide		
DMSO	dimethylsulfoxide		
DTBMP	2,6-di- <i>tert</i> -butyl-4-methylpyridine		



PE	petroleum ether
Ph	phenyl
Phth	phthaloyl
Piv	pivaloyl
ppm	parts per million
Pr	propyl
py	pyridine
rt	room temperature
s	singlet
Sat.	saturated
t	triplet
TBAB	tetra- <i>n</i> -butylammonium bromide
TBAI	tetra- <i>n</i> -butylammonium iodide
<i>t</i> Bu	<i>tert</i> -butyl
TBDPS	<i>tert</i> -butyldiphenylsilyl
TBS	<i>tert</i> -butyldimethylsilyl
Tf	trifluoromethanesulfonyl
TFA	trifluoroacetic acid
THF	tetrahydrofuran
TEMPO	2,2,6,6-tetramethyl-1-piperidinyloxy
TLC	thin layer chromatography
TLR	Toll like receptor
Tol	<i>para</i> -toluyl
TMS	trimethylsilyl
Ts	tosyl / <i>para</i> -toluenesulfonyl
TTBP	2,4,6-tri- <i>tert</i> -butylpyrimidine
UV	ultraviolet

