

A Non-Degradative Extraction Method for Molecular Structure Characterization of Bacterial Glycogen Particles

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Materials

Name	Company	Catalog Number	Comments
Equipment			
Agilent 1260 infinity SEC system	Agilent	1260 infinity II	Particle size distribution
Analytical column	PSS	10-1000	-
Centrifuge	Eppendorf	5420	-
Filter membrane	Cambio	Km-0220	-
Fluorescence-assisted capillary electrophoresis system	Beckman Coulter	-	Chain length distribution
Freeze dryer	Xinzhi	SCIENTZ-10N	Lyophilization of bacteria and glycogen
Freezer	Thermo Fisher	Forma 900	Sample storage
Guard column	PSS	SUPPERMA	-
Incubator	Thermo Fisher	PR505750R-CN	-
Low-speed large-capacity centrifuge	Hexi	HR/T20MM	Sample centrifugation
Multiskan FC microplate reader	Thermo Fisher	1410101	-
Optima XPN ultracentrifuge	Beckman	XPN-100/90/80	For glycogen
Oscillator	Xinbao	SHZ-82	-
PA-800 Plus System	Beckman Coulter	A66528	-
pH meter	Mettler Toledo	FE28 -TRIS	-
Refractive index detector	Wyatt	Optilab T-rEX	-
Refrigerator	Haier	BCD-406WDPD	-
Thermomixer	Shanghai Jingxin	JXH-100	Sample incubation
Transmission electron microscope	Hitachi Corporation	H-7000	Glycogen particle morphology

Ultracentrifuge tube	Beckman	355651	-
Ultrasonic cell crusher	Ningbo Xinzhi	Scientz-IID	Bacteria disruptor
Ultrasonic oscillating water bath	Jietuo	JT-1027HTD	-
Vortex mixer	Tiagen	OSE-VX-01	-
Water system	Merck Millipore	H ₂ O-MM-UV-T	Deionized water
Material			
8-Aminopyrene-1,3,6-Trisulfonic Acid Trisodium Salt	Sigma-Aldrich	196504-57-1	-
Absolute ethanol	Guoyao	10009228	-
Agar powder	Solarbio	A1890	-
Alpha-amylase	Megazyme	E-BLAAM-40ML	-
Amyloglucosidase	Megazyme	E-AMGDF-40ML	-
cOmplete Mini	Roche	4693159001	-
D-(+)-Glucose	Sigma-Aldrich	G8270-1kg	-
D-Glucose Assay Kit (GOPOD Format)	Megazyme	K-GLUC	Glycogen quantification
Dimethyl sulfoxide	Vicmed	Vic147	Chaotropic agent
<i>E. coli</i> BL21(DE3)	Tiagen	CB105-02	-
Ethylene diamine tetra-acetic acid	Vicmed	Vic1488	-
Glacial acetic acid	Guoyao	10000218	-
Glycerol	Guoyao	10010618	Bacterial storage
Hydrochloric acid	Guoyao	10011008	-
Hydroxymethyl aminomethane	Sigma-Aldrich	V900483-500g	-
Isoamylase	MegaZyme	9067-73-6	Glycogen debranch
Lithium chloride	Sigma-Aldrich	62476-100g	-
M9, Minimal Salts, 5×	Sigma-Aldrich	M6030-1kg	Bacterial culture
Potassium hydroxide	Guoyao	10017008	-
Pullulan standard	PSS	-	-
Sodium acetate trihydrate	Guoyao	10018718	-
Sodium azide	Sigma-Aldrich	26628-22-8	-
Sodium chloride	Guoyao	10019318	Bacterial culture
Sodium cyanoborohydride	Huaweiruike	hws001297	-
Sodium diphosphate	Sigma-Aldrich	71515-250g	-
Sodium Fluoride	Macklin	S817988-250g	-
Sodium hydroxide	Guoyao	10019762	-
Sodium nitrate	Guoyao	10019928	-
Sodium pyrophosphate	Sigma-Aldrich	V900195-500g	-
Sucrose	Guoyao	10021463	-
Trichloroacetic acid	Guoyao	40091961	-
Tryptone	Oxoid	LP0042	Bacterial culture
Yeast Extract	Oxoid	LP0021	Bacterial culture