

**Table S1.** Physiological and biochemical characteristics of isolates KAU2022.

Characteristic	Results
spore-forming,	+
rod-shaped bacterium	+
Gram-positive	+
motile	+
Growth temperature (°C):	
Range	20–55
Optimum	35–40
Nitrate reduction	+
Hydrolysis of:	
Casein	–
Gelatin	+
catalase	positive
Starch	–
indole	negative
Utilization of sole carbon sources:	
L-Alanine	+
D-Gluconate	+
2-Ketogluconate	+
DL-Lactate	–
Maltose	+
D-Mannitol	+
<i>N</i> -Acetyl-D-glucosamine	+
Phenylacetate	+
Sucrose	+
Citrate	+
glucose	+
xylose	–
arabinose	–
fructose	–
Cellobiose	+

+, Positive; –, negative; v, variable.

**Table S2.** Morphological and physiological characteristics of the selected isolate KAU2025.

Characteristic	Results
spore-forming,	–
rod-shaped bacterium	+
Gram-positive	–
motile	+
<b>Hydrolysis of:</b>	
Casein	–
Gelatin	+
catalase	+
Starch	–
Lipases	+
Amylases	+
Cellulases	+
Proteases	–
Chitinase	+
Citrate	+
V.P.	+
M.R.	
<b>Carbohydrate fermentation tests</b>	
Mannose Negative	–
Xylose Negative	–
Mannitol Negative	–
Raffinose Negative	–
Rhamnose Negative	–
Inositol Negative	–
Galactose Positive	+
Fructose Positive	+
D-glucose Positive	+
Glucose	+

+, Positive; –, negative.