Nocardioides koreensis

Strain identifier

BacDive ID:	11142	**DOI:**	10.13145/bacdive11142.20190402.4
Type strain:	yes	**Designation:**	MSL-09
Culture col. no.:	DSM 19266, KCTC 19272		

Sections

Name and taxonomic classification

Ref.: 7985	**Domain**	Bacteria
Ref.: 7985	**Phylum**	Actinobacteria
Ref.: 7985	**Class**	Actinobacteria
Ref.: 7985	**Order**	Actinomycetales
Ref.: 7985	**Family**	Nocardioidaceae
Ref.: 7985	**Genus**	Nocardioides
Ref.: 7985	**Species**	Nocardioides koreensis
Ref.: 7985	**Full Scientific Name**	Nocardioides koreensis Dastager et al. 2008
Ref.: 7985	**Designation:**	MSL-09
Ref.: 7985	**Type strain:**	yes

Prokaryotic Nomenclature Up-to-date (PNU)

Ref.: 20215	**Domain**	Bacteria
Ref.: 20215	**Phylum**	Actinobacteria
Ref.: 20215	**Class**	Actinobacteria
Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 47:483*
Ref.: 20215	**Family**	Nocardioidaceae
Ref.: 20215	**Genus**	Nocardioides
Ref.: 20215	Taxonomical status	genus (AL)

Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 30:225
Ref.: 20215	**Species**	Nocardioides koreensis
Ref.: 20215	Taxonomical status	sp. nov. (VP)
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 58:2292*
Ref.: 20215	**Full Scientific Name**	Nocardioides koreensis Dastager et al. 2008

Morphology and physiology

Ref.: 32484	**Gram stain**	positive
Ref.: 32484	**Cell length**	0.8-3.2 µm
Ref.: 32484	**Cell width**	0.2-0.7 µm
Ref.: 32484	**Cell shape**	rod-shaped
Ref.: 32484	**Motility**	yes
Ref.: 19779	**Cultivation medium used**	ISP 2
Ref.: 19779	**Colony color**	Light ivory (1015)
Ref.: 19779	**Incubation period**	10-14 days
Ref.: 19779	**Cultivation medium used**	ISP 3
Ref.: 19779	**Colony color**	Light ivory (1015)
Ref.: 19779	**Incubation period**	10-14 days
Ref.: 19779	**Cultivation medium used**	ISP 4
Ref.: 19779	**Colony color**	Light ivory (1015)
Ref.: 19779	**Incubation period**	10-14 days
Ref.: 19779	**Cultivation medium used**	ISP 5
Ref.: 19779	**Incubation period**	10-14 days
Ref.: 19779	**Cultivation medium used**	ISP 6
Ref.: 19779	**Colony color**	Light ivory (1015)
Ref.: 19779	**Incubation period**	10-14 days
Ref.: 19779	**Cultivation medium used**	ISP 7

Nocardioides koreensis

Ref.: 19779 **Incubation period** 10-14 days

Halophily

Salt	Tested relation	Salt conc.
NaCl	growth	0-5 %
NaCl	optimum	0-5 %

Ref.: 32484

Ref.: 32484

Ref.: 19779 **API coryne**

API ID	317
NIT	+
PYZ	-
PYRA	-
PAL	+
betaGUR	-
betaGAL	+
alphaGLU	-
betaNAG	-
ESC	-
URE	+
GEL	-
Control	n.d.
GLU	+
RIB	-
XYL	-
MAN	-
MAL	+
LAC	+
SAC	+
GLYG	-
CAT	n.d.

Ref.: 19779 **API zym**

API ID	603
Control	n.d.
Alkaline phosphatase	+
Esterase (C 4)	+
Esterase Lipase (C 8)	+
Lipase (C 14)	-
Leucine arylamidase	-

Valine arylamidase	-
Cystine arylamidase	-
Trypsin	-
Alpha-chymotrypsin	-
Acid phosphatase	+
Naphthol-AS-BI-phosphohydrolase	+
Alpha-galactosidase	-
Beta-galactosidase	-
Beta-glucoronidase	-
Alpha-glucosidase	+
Beta-glucosidase	-
N-acetyl-beta-glucosaminidase	-
Alpha-mannosidase	-
Alpha-fucosidase	-

Metabolite utilization

	Chebi ID	Metabolite	Utilization activity	Kind of utilization tested
Ref.: 32484	17716	Lactose	+	carbon source
Ref.: 32484	37684	Mannose	+	carbon source
Ref.: 32484	28053	Melibiose	+	carbon source

Ref.: 19779	**Medium Name (multicellularity)**	ISP 2
Ref.: 19779	**Multicellular complex forming ability**	no
Ref.: 19779	**Medium Name (multicellularity)**	ISP 3
Ref.: 19779	**Multicellular complex forming ability**	no
Ref.: 19779	**Medium Name (multicellularity)**	ISP 4
Ref.: 19779	**Multicellular complex forming ability**	no
Ref.: 19779	**Medium Name (multicellularity)**	ISP 5
Ref.: 19779	**Multicellular complex forming ability**	no

Ref.: 19779	**Medium Name (multicellularity)**	ISP 6
Ref.: 19779	**Multicellular complex forming ability**	no
Ref.: 19779	**Medium Name (multicellularity)**	ISP 7
Ref.: 19779	**Multicellular complex forming ability**	no
Ref.: 32484	**Decomposition/lysis**	aggregates in chains
Ref.: 32484	**Oxygen tolerance**	aerobe
Ref.: 32484	**Ability of spore formation**	no

Culture and growth conditions

Ref.: 7985	**Culture medium**	R2A MEDIUM (DSMZ Medium 830), 28°C
Ref.: 7985	**Culture medium growth**	yes
Ref.: 7985	**Culture medium link**	https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium830.pdf
Ref.: 19779	**Culture medium**	ISP 2
Ref.: 19779	**Culture medium growth**	yes
Ref.: 19779	**Culture medium composition**	Name: ISP 2 / Yeast Malt Agar (5265); 5265 Composition Malt extract 10.0 g/l Yeast extract 4.0 g/l Glucose 4.0 g/l Agar 15.0 g/l Preparation: Sterilisation: 20 minutes at 121°C pH before sterilisation: 7.0 Usage: Maintenance and Taxonomy Organisms: All Actinomycetes
Ref.: 19779	**Culture medium**	ISP 3
Ref.: 19779	**Culture medium growth**	yes

Ref.: 19779	**Culture medium composition**	Name: ISP 3; 5315 Composition Dog oat flakes 20.0 g/l Trace element solution (5314) 2.5 ml/l Agar 18.0 g/l Preparation: Oat flakes are cooked for 20 minutes, trace element solution and agar are added (in the case of non rolled oat flakes the suspension has to bee filtrated). Sterilisation: 20 minutes at 121°C pH before sterilisation: 7.8 Usage: Maintenance and taxonomy (e.g. SEM As liquid medium for metabolite production) Organisms: All Actinomycetes Trace element solution 5314 Name: Trace element solution 5314; 5314 Composition CaCl2 x H2O 3.0 g/l Fe-III-citrate 1.0 g/l MnSO4 0.2 g/l ZnCl2 0.1 g/l CuSO4 x 5 H2O 0.025 g/l Sodium tetra borate 0.2 g/l CoCl2 x 6 H2O 0.004 g/l Sodium molybdate 0.01 g/l Preparation: Use double destillated water. Sterilisation: 20 minutes at 121°C pH before sterilisation: Usage: Trace element solution for different media Organisms:
Ref.: 19779	**Culture medium**	ISP 4
Ref.: 19779	**Culture medium growth**	yes
Ref.: 19779	**Culture medium composition**	Name: ISP 4; DSM 547 Solution I: Difco soluble starch, 10.0 g. Make a paste of the starch with a small amount of cold distilled water and bring to a volume of 500 ml. Solution II: CaCO3 2.0 g K2HPO4 (anhydrous) 1.0 g MgSO4 x 7 H2O 1.0 g NaCl 1.0 g (NH4)2SO4 2.0 g Distilled water 500.0 ml Trace salt solution (see below) 1.0 ml The pH should be between 7.0 and 7.4. Do not adjust if it is within this range. Mix solutions I and II together. Add 20.0 g agar. Liquify agar by steaming at 100°C for 10 to 20 min. Trace element solution: FeSO4 x 7 H2O 0.1 g MnCl2 x 4 H2O 0.1 g ZnSO4 x 7 H2O 0.1 g Distilled water 100.0 ml
Ref.: 19779	**Culture medium**	ISP 5
Ref.: 19779	**Culture medium growth**	yes
Ref.: 19779	**Culture medium composition**	Name: ISP 5 (5323) Composition L-Asparagine 1.0 g/l Glycerol 10.0 g/l K2HPO4 1.0 g/l Salt solution (see preparation) 1.0 ml/l Agar 20.0 g/l Preparation: Salt solution 1.0 g FeSO4 x 7 H2O 1.0 g MnCl2 x 4 H2O 1.0 g ZNSO4 x 7 H2O in 100 ml water Sterilisation: 20 minutes at 121°C pH before sterilisation: 7.2 Usage: Maintenance and taxonomy Organisms: All Actinomycetes
Ref.: 19779	**Culture medium**	ISP 6
Ref.: 19779	**Culture medium growth**	yes
Ref.: 19779	**Culture medium composition**	Name: ISP 6 (5318) Composition Peptone 15.0 g/l Proteose peptose 5.0 g/l Ferric ammonium citrate 0.5 g/l Sodium glycerophosphate 1.0 g/l Sodium thiosulfate 0.08 g/l Yeast extract 1.0 g/l Agar 15.0 g/l Sterilisation: 20 minutes at 121°C pH before sterilisation: Usage: Production of melanoid pigments Organisms: All Actinomycetes
Ref.: 19779	**Culture medium**	ISP 7
Ref.: 19779	**Culture medium growth**	yes

Ref.: 19779	**Culture medium composition**	Name: ISP 7 (5322) Composition Glycerol 15.0 g/l L-Tyrosine 0.5 g/l L-Asparagine 1.0 g/l K2HPO4 0.5 g/l NaCl 0.5 g/l FeSO4 x 7 H2O 0.01 g/l Trace element solution 5343 1.0 ml/l Agar 20.0 Sterilisation: 20 minutes at 121°C pH before sterilisation: 7.3 Usage: Production of melanoid pigments Organisms: All Actinomycetes

Temperatures

	Kind of temperature	Temperature
Ref.: 7985	growth	28 °C
Ref.: 19779	optimum	28 °C
Ref.: 32484	growth	27-37 °C
Ref.: 32484	optimum	30 °C

Ref.: 7985	**Temperature range**	mesophilic
Ref.: 19779	**Temperature range**	mesophilic
Ref.: 32484	**Temperature range**	mesophilic

pH

	Kind of pH	pH
Ref.: 32484	growth	07-08
Ref.: 32484	optimum	07-08

Isolation, sampling and environmental information

Ref.: 7985	**Sample type/isolated from**	soil, farming field
Ref.: 7985	**Geographic location (country and/or sea, region)**	Bigeum Island
Ref.: 7985	**Country**	Republic of Korea
Ref.: 7985	**Continent**	Asia

Isolation sources categories

Cat1	Cat2	Cat3
#Engineered	#Agriculture	#Field
#Environmental	#Terrestrial	#Soil

Application and interaction

Ref.: 19779	**Biosafety level**	1 Risk group (German classification)
Ref.: 7985	**Biosafety level**	1 Risk group (German classification)

Molecular biology

Ref.: 7985	**GC-content**	69.9 mol% high performance liquid chromatography (HPLC)
Ref.: 32484	**GC-content**	69.9 mol%

	Sequence database	Sequence accession description	Sequence accession number	Sequence length(bp)	Associated NCBI tax ID
Ref.: 7985	GenBank Direct submission	Nocardioides sp. MSL 09 16S ribosomal RNA gene, partial sequence	EF466115	1398	433651

Strain availability

Ref.: 7985	**Culture collection no.**	DSM 19266, KCTC 19272
Ref.: 7985	**Strain history**	<- Chang-Jin Kim; MSL-09

Associated Passport(s) in StrainInfo

Ref.: 20218	834855 - http://www.straininfo.net/strains/834855
Ref.: 20218	834856 - http://www.straininfo.net/strains/834856

References

Ref.: 7985 Leibniz Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Curators of the DSMZ; DSM 19266

Ref.: 19779 Wink, J.: Compendium of Actinobacteria. HZI-Helmholtz-Centre for Infection Research, Braunschweig.

Ref.: 20215 D.Gleim, M.Kracht, N.Weiss et. al.: Prokaryotic Nomenclature Up-to-date - compilation of all names of Bacteria and Archaea, validly published according to the Bacteriological Code since 1. Jan. 1980, and validly published nomenclatural changes since.

Ref.: 20218 Verslyppe, B., De Smet, W., De Baets, B., De Vos, P., Dawyndt P. StrainInfo introduces electronic passports for microorganisms.. Syst Appl Microbiol. 37: 42-50 2014 (10.1016/j.syapm.2013.11.002, 24321274)

Ref.: 32484 Barberan A, Caceres Velazquez H, Jones S, Fierer N. Hiding in Plain Sight: Mining Bacterial Species Records for Phenotypic Trait Information. mSphere 2: None-None 2017 (10.1128/mSphere.00237-17, None) - ***originally annotated from #28704***

Ref.: 28704 IJSEM 2292 2008 (10.1099/ijs.0.65566-0)

*** These References are textmined**

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