

### Strain identifier

**BacDive ID:** 13511      **DOI:** 10.13145/bacdive13511.20190402.4  
**Type strain:** yes      **Designation:** 03-9939  
**Culture col. no.:** DSM 45114, CCM 7461, KCTC 19294

### Sections

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### Name and taxonomic classification

Ref.: 12354	<b>Domain</b>	Bacteria
Ref.: 12354	<b>Phylum</b>	Actinobacteria
Ref.: 12354	<b>Class</b>	Actinobacteria
Ref.: 12354	<b>Order</b>	Actinomycetales
Ref.: 12354	<b>Family</b>	Pseudonocardiaceae
Ref.: 12354	<b>Genus</b>	Alloactinosynnema
Ref.: 12354	<b>Species</b>	Alloactinosynnema album
Ref.: 12354	<b>Full Scientific Name</b>	Alloactinosynnema album Yuan et al. 2010
Ref.: 12354	<b>Designation:</b>	03-9939
Ref.: 12354	<b>Type strain:</b>	yes

#### **Prokaryotic Nomenclature Up-to-date (PNU)**

Ref.: 20215	<b>Domain</b>	Bacteria
Ref.: 20215	<b>Phylum</b>	Actinobacteria
Ref.: 20215	<b>Class</b>	Actinobacteria
Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 47:483*
Ref.: 20215	<b>Family</b>	Pseudonocardiaceae
Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 39:205
Ref.: 20215	<b>Genus</b>	Actinokineospora



Ref.: 20215	Taxonomical status	gen. nov. (VL)
Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 38:449
Ref.: 20215	<b>Species</b>	Actinokineospora alba
Ref.: 20215	Taxonomical status	comb. nov. (VL)
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 68:3379
Ref.: 20215	<b>Full Scientific Name</b>	Actinokineospora alba (Yuan et al. 2010) Nouioui et al. 2018
Ref.: 20215	<b>Synonym</b>	Alloactinosynnema album

## Morphology and physiology

Ref.: 29314	<b>Gram stain</b>	positive
Ref.: 20165	<b>Cultivation medium used</b>	ISP 2
Ref.: 20165	<b>Colony color</b>	Sand yellow (1002)
Ref.: 20165	<b>Incubation period</b>	10-14 days
Ref.: 20165	<b>Cultivation medium used</b>	ISP 3
Ref.: 20165	<b>Colony color</b>	Ivory (1014)
Ref.: 20165	<b>Incubation period</b>	10-14 days
Ref.: 20165	<b>Cultivation medium used</b>	ISP 4
Ref.: 20165	<b>Colony color</b>	Beige (1001)
Ref.: 20165	<b>Incubation period</b>	10-14 days
Ref.: 20165	<b>Cultivation medium used</b>	ISP 5
Ref.: 20165	<b>Colony color</b>	Green beige (1000)
Ref.: 20165	<b>Incubation period</b>	10-14 days
Ref.: 20165	<b>Cultivation medium used</b>	ISP 6
Ref.: 20165	<b>Colony color</b>	Sand yellow (1002)
Ref.: 20165	<b>Incubation period</b>	10-14 days
Ref.: 20165	<b>Cultivation medium used</b>	ISP 7
Ref.: 20165	<b>Colony color</b>	Beige (1001)



Ref.: 20165

**Incubation period** 10-14 days

Ref.: 29314

Ref.: 29314

Ref.: 29314

Ref.: 29314

<b>Enzymes</b>	<b>Enzyme</b>	<b>Enzyme activity</b>	<b>EC number</b>
	acid phosphatase	+	3.1.3.2
	alkaline phosphatase	+	3.1.3.1
	alpha-galactosidase	+	3.2.1.22
	gelatinase	+	

Ref.: 29314

<b>Halophily</b>	<b>Salt</b>	<b>Tested relation</b>	<b>Salt conc.</b>
	NaCl	growth	0-3 %

Ref.: 20165

**API zym**

API ID	946
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	-

Ref.: 20165

Ref.: 20165

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<b>Metabolite utilization</b>	<b>Chebi ID</b>	<b>Metabolite</b>	<b>Utilization activity</b>	<b>Kind of utilization tested</b>
	22599	Arabinose	-	
	62968	Cellulose	-	
	30769	Citric acid	+	carbon source



Ref.: 29314	4853	Esculin	+	hydrolysis
Ref.: 20165	28757	Fructose	+	
Ref.: 29314	5417	Glucosamine	+	carbon source
Ref.: 20165	17234	Glucose	-	
Ref.: 20165	17268	Inositol	-	
Ref.: 29314	30794	Malonic acid	+	carbon source
Ref.: 20165	29864	Mannitol	+	
Ref.: 29314	37684	Mannose	+	carbon source
Ref.: 29314	28053	Melibiose	+	carbon source
Ref.: 29314	17632	Nitrate	+	reduction
Ref.: 29314	28044	Phenylalanine	+	carbon source
Ref.: 20165	16634	Raffinose	-	
Ref.: 20165	26546	Rhamnose	-	
Ref.: 29314	26546	Rhamnose	+	carbon source
Ref.: 29314	33942	Ribose	+	carbon source
Ref.: 29314	30911	Sorbitol	+	carbon source
Ref.: 20165	17992	Sucrose	+	
Ref.: 29314	17992	Sucrose	+	carbon source
Ref.: 29314	27082	Trehalose	+	carbon source
Ref.: 20165	18222	Xylose	-	
Ref.: 29314	18222	Xylose	+	carbon source

Ref.: 20165      **Medium Name (multicellularity)**      ISP 2

Ref.: 20165      **Multicellular complex forming ability**      no

Ref.: 20165      **Medium Name (multicellularity)**      ISP 3

Ref.: 20165      **Multicellular complex forming ability**      no

Ref.: 20165      **Medium Name (multicellularity)**      ISP 4

Ref.: 20165      **Multicellular complex forming ability**      no

Ref.: 20165      **Medium Name (multicellularity)**      ISP 5



Ref.: 20165	<b>Multicellular complex forming ability</b>	no
Ref.: 20165	<b>Medium Name (multicellularity)</b>	ISP 6
Ref.: 20165	<b>Multicellular complex forming ability</b>	no
Ref.: 20165	<b>Medium Name (multicellularity)</b>	ISP 7
Ref.: 20165	<b>Multicellular complex forming ability</b>	no
Ref.: 29314	<b>Oxygen tolerance</b>	aerobe
Ref.: 29314	<b>Ability of spore formation</b>	yes

**Culture and growth conditions**

Ref.: 12354	<b>Culture medium</b>	GYM STREPTOMYCES MEDIUM (DSMZ Medium 65), 28°C
Ref.: 12354	<b>Culture medium growth</b>	yes
Ref.: 12354	<b>Culture medium link</b>	<a href="https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium65.pdf">https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium65.pdf</a>
Ref.: 20165	<b>Culture medium</b>	ISP 2
Ref.: 20165	<b>Culture medium growth</b>	yes
Ref.: 20165	<b>Culture medium composition</b>	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.: 20165	<b>Culture medium</b>	ISP 3
Ref.: 20165	<b>Culture medium growth</b>	yes

Ref.: 20165	<b>Culture medium composition</b>	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 be filtered). 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 CaCl <sub>2</sub> x H <sub>2</sub> O 3.0 g/l Fe-III-citrate 1.0 g/l MnSO <sub>4</sub> 0.2 g/l ZnCl <sub>2</sub> 0.1 g/l CuSO <sub>4</sub> x 5 H <sub>2</sub> O 0.025 g/l Sodium tetra borate 0.2 g/l CoCl <sub>2</sub> x 6 H <sub>2</sub> O 0.004 g/l Sodium molybdate 0.01 g/l Preparation: Use double distilled water. Sterilisation: 20 minutes at 121°C pH before sterilisation: Usage: Trace element solution for different media Organisms:
Ref.: 20165	<b>Culture medium</b>	ISP 4
Ref.: 20165	<b>Culture medium growth</b>	yes
Ref.: 20165	<b>Culture medium composition</b>	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: CaCO <sub>3</sub> 2.0 g K <sub>2</sub> HPO <sub>4</sub> (anhydrous) 1.0 g MgSO <sub>4</sub> x 7 H <sub>2</sub> O 1.0 g NaCl 1.0 g (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 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: FeSO <sub>4</sub> x 7 H <sub>2</sub> O 0.1 g MnCl <sub>2</sub> x 4 H <sub>2</sub> O 0.1 g ZnSO <sub>4</sub> x 7 H <sub>2</sub> O 0.1 g Distilled water 100.0 ml
Ref.: 20165	<b>Culture medium</b>	ISP 5
Ref.: 20165	<b>Culture medium growth</b>	yes
Ref.: 20165	<b>Culture medium composition</b>	Name: ISP 5 (5323) Composition L-Asparagine 1.0 g/l Glycerol 10.0 g/l K <sub>2</sub> HPO <sub>4</sub> 1.0 g/l Salt solution (see preparation) 1.0 ml/l Agar 20.0 g/l Preparation: Salt solution 1.0 g FeSO <sub>4</sub> x 7 H <sub>2</sub> O 1.0 g MnCl <sub>2</sub> x 4 H <sub>2</sub> O 1.0 g ZNSO <sub>4</sub> x 7 H <sub>2</sub> O in 100 ml water Sterilisation: 20 minutes at 121°C pH before sterilisation: 7.2 Usage: Maintenance and taxonomy Organisms: All Actinomycetes
Ref.: 20165	<b>Culture medium</b>	ISP 6
Ref.: 20165	<b>Culture medium growth</b>	yes
Ref.: 20165	<b>Culture medium composition</b>	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.: 20165	<b>Culture medium</b>	ISP 7
Ref.: 20165	<b>Culture medium growth</b>	yes

Ref.: 20165 **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 K<sub>2</sub>HPO<sub>4</sub> 0.5 g/l NaCl 0.5 g/l FeSO<sub>4</sub> x 7 H<sub>2</sub>O 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

Ref.: 12354 Ref.: 20165 Ref.: 29314 Ref.: 29314	Temperatures	Kind of temperature	Temperature
		growth	28 °C
		optimum	28 °C
		growth	20-37 °C
		optimum	30 °C

Ref.: 12354 **Temperature range** mesophilic  
 Ref.: 20165 **Temperature range** mesophilic  
 Ref.: 29314 **Temperature range** mesophilic

Ref.: 29314 Ref.: 29314	pH	Kind of pH	pH
		growth	06-08
		optimum	7.25

### Isolation, sampling and environmental information

Ref.: 12354 **Sample type/isolated from** soil sample  
 Ref.: 12354 **Geographic location (country and/or sea, region)** Xinjiang Province  
 Ref.: 12354 **Country** China  
 Ref.: 12354 **Continent** Asia

Isolation sources categories	Cat1	Cat2	Cat3
	#Environmental	#Terrestrial	#Soil

### Application and interaction

Ref.: 12354 **Biosafety level** 1 Risk group (German classification)

### Molecular biology

Ref.: 12354 **GC-content** 68.2 mol% thermal denaturation, midpoint method (T<sub>m</sub>)  
 Ref.: 29314 **GC-content** 68.2 mol%



	Sequence database	Sequence accession description	Sequence accession number	Sequence length(bp)	Associated NCBI tax ID
<a href="#">Ref.: 12354</a>	GenBank Direct submission	Alloactinosynnema album strain 03-9939 16S ribosomal RNA gene, partial sequence	EU438907	1442	504798

## Strain availability

[Ref.: 12354](#)      **Culture collection no.**      DSM 45114, CCM 7461, KCTC 19294

[Ref.: 12354](#)      **Strain history**      <- Y.-Q. Zhang, Chinese Acad. Med. Sciences & Peking Union Medical College; 03-9939 <- Y.-Z. Wei et al.

### **Associated Passport(s) in StrainInfo**

[Ref.: 20218](#)      849642 - <http://www.straininfo.net/strains/849642>

[Ref.: 20218](#)      849641 - <http://www.straininfo.net/strains/849641>

[Ref.: 20218](#)      849643 - <http://www.straininfo.net/strains/849643>

## References

[Ref.: 12354](#)      Leibniz Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Curators of the DSMZ; DSM 45114

[Ref.: 20165](#)      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.: 29314](#)      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 #25727**

[Ref.: 25727](#)      IJSEM 39 2010 (10.1099/ijms.0.010744-0)

**\* These References are textmined**

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