

Strain identifier

BacDive ID: 1787 **DOI:** 10.13145/bacdive1787.20190402.4
Type strain: yes **Designation:** AMX 51
Culture col. no.: CCUG 55772, DSM 13099, ATCC 700918, CIP 106457

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Name and taxonomic classification

Ref.: 4903	Domain	Bacteria
Ref.: 4903	Phylum	Proteobacteria
Ref.: 4903	Class	Alphaproteobacteria
Ref.: 4903	Order	Rhizobiales
Ref.: 4903	Family	Bradyrhizobiaceae
Ref.: 4903	Genus	Bosea
Ref.: 4903	Species	<i>Bosea minatitlanensis</i>
Ref.: 4903	Full Scientific Name	<i>Bosea minatitlanensis</i> Ouattara et al. 2003
Ref.: 4903	Designation:	AMX 51
Ref.: 4903	Type strain:	yes

Prokaryotic Nomenclature Up-to-date (PNU)

Ref.: 20215	Domain	Bacteria
Ref.: 20215	Phylum	Proteobacteria
Ref.: 20215	Class	Alphaproteobacteria
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 56:1
Ref.: 20215	Family	Bradyrhizobiaceae
Ref.: 20215	Genus	Bosea
Ref.: 20215	Taxonomical status	gen. nov. (VP)

Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 46:981*
Ref.: 20215	Species	Bosea minatitlanensis
Ref.: 20215	Taxonomical status	sp. nov. (VP)
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 53:1247*
Ref.: 20215	Full Scientific Name	Bosea minatitlanensis Ouattara et al. 2003

Morphology and physiology

Ref.: 23323	Gram stain	negative
Ref.: 23323	Cell length	1.5-2.0 µm
Ref.: 23323	Cell width	0.5 µm
Ref.: 23323	Cell shape	rod-shaped
Ref.: 23323	Motility	yes
Ref.: 23323	Flagellum arrangement	monotrichous, polar
Ref.: 23323	Cultivation medium used	Trypticase soy
Ref.: 23323	Colony shape	circular
Ref.: 23323	Incubation period	2-10 days

Enzymes	Enzyme	Enzyme activity	EC number
Ref.: 23323	amylase	+/-	
Ref.: 23323	arginine dihydrolase	-	3.5.3.6
Ref.: 23323	beta-galactosidase	-	3.2.1.23
Ref.: 23323	catalase	+	1.11.1.6
Ref.: 23323	cytochrome oxidase	+	1.9.3.1
Ref.: 23323	DNase	-	
Ref.: 23323	esterase	-	
Ref.: 23323	lysine decarboxylase	-	4.1.1.18
Ref.: 23323	nitrate reductase	-	1.7.99.4
Ref.: 23323	nitrite reductase	-	1.7.1.4
Ref.: 23323	urease	+	3.5.1.5

Antibiotica	Chebi ID	Metabolite	Antib. sensitivity	Conc.	Antib. intermediate	Conc.	Antib. resistance	Conc.
Ref.: 23323	2637	Amikacin	yes	30 µg				
Ref.: 23323	3508	Ceftazidime					yes	30 µg
Ref.: 23323	3542	Cephalothin	yes	30 µg				

Ref.: 23323	204928	Cephotaxime	yes	30 µg				
Ref.: 23323	100241	Ciprofloxacin					yes	5 µg
Ref.: 23323	3770	Co-Trimoxazole	yes					
Ref.: 23323	37943	Colistin	yes	300 Unit				
Ref.: 23323	17833	Gentamicin	yes	10 Unit				
Ref.: 23323	471744	Imipenem	yes	10 µg				
Ref.: 23323	7528	Netilmycin	yes	30 µg				
Ref.: 23323	7731	Ofloxacin					yes	5 µg
Ref.: 23323	8232	Piperacillin			yes	75 µg		
Ref.: 23323	9587	Ticarcillin	yes	75 µg				
Ref.: 23323	28864	Tobramycin	yes	10 µg				

Antibiotica	Group ID	Chebi ID	Metabolite	Antib. sensitivity	Antib. intermediate
Ref.: 23323	11	2676	Amoxicillin		yes
Ref.: 23323	11	48947	Clavulanic acid		yes
Ref.: 23323	16	8232	Piperacillin	yes	
Ref.: 23323	16	9421	Tazobactam	yes	

Metabolite production	Chebi ID	Metabolite	Production
Ref.: 23323	35581	Indole	no

Physiological tests	Chebi ID	Metabolite	Citrate-test
Ref.: 23323	30769	Citric acid	-

Metabolite utilization	Chebi ID	Metabolite	Utilization activity	Kind of utilization tested
Ref.: 23323	16808	2-Dehydro-D-glucuronate	-	builds acid from
Ref.: 23323	16808	2-Dehydro-D-glucuronate	+	growth
Ref.: 23323	30915	2-Oxoglutaric acid	+	growth
Ref.: 23323	20067	3-Hydroxybutyric acid	+	growth
Ref.: 23323	16865	4-Aminobutyric acid	+	growth



Ref.: 23323	17426	5-Dehydro-D-gluconate	-	builds acid from
Ref.: 23323	15366	Acetic acid	+	growth
Ref.: 23323	27613	Amygdalin	-	builds acid from
Ref.: 23323	18305	Arbutin	-	builds acid from
Ref.: 23323	30769	Citric acid	-	carbon source
Ref.: 23323	41131	Crotonate	+	growth
Ref.: 23323	15963	D-Adonitol	-	builds acid from
Ref.: 23323	17108	D-Arabinose	-	builds acid from
Ref.: 23323	18333	D-Arabitol	-	builds acid from
Ref.: 23323	17057	D-Cellobiose	-	builds acid from
Ref.: 23323	15824	D-Fructose	-	builds acid from
Ref.: 23323	28847	D-Fucose	-	builds acid from
Ref.: 23323	12936	D-Galactose	-	builds acid from
Ref.: 23323	18024	D-Galacturonic acid	+	growth
Ref.: 23323	33198	D-Gluconic acid	+	growth
Ref.: 23323	17634	D-Glucose	-	builds acid from
Ref.: 23323	4178	D-Glucuronic acid	+	growth
Ref.: 23323	17716	D-Lactose	-	builds acid from
Ref.: 23323	62318	D-Lyxose	-	builds acid from
Ref.: 23323	15588	D-Malate	+	growth
Ref.: 23323	17306	D-Maltose	-	builds acid from
Ref.: 23323	16899	D-Mannitol	-	builds acid from
Ref.: 23323	16024	D-Mannose	-	builds acid from
Ref.: 23323	6731	D-Melezitose	-	builds acid from
Ref.: 23323	28053	D-Melibiose	-	builds acid from
Ref.: 23323	16634	D-Raffinose	-	builds acid from
Ref.: 23323	16988	D-Ribose	-	builds acid from
Ref.: 23323	17992	D-Saccharose	-	builds acid from
Ref.: 23323	17924	D-Sorbitol	-	builds acid from
Ref.: 23323	16443	D-Tagatose	-	builds acid from
Ref.: 23323	16551	D-Trehalose	-	builds acid from
Ref.: 23323	32528	D-Turanose	-	builds acid from
Ref.: 23323	65327	D-Xylose	-	builds acid from
Ref.: 23323	33871	DL-Glycerate	+	growth
Ref.: 23323	24996	DL-Lactate	+	growth
Ref.: 23323	17113	Erythritol	-	builds acid from
Ref.: 23323	4853	Esculin	-	builds acid from



Ref.: 23323	30751	Formic acid	+	growth
Ref.: 23323	16813	Galactitol	-	builds acid from
Ref.: 23323	28066	Gentiobiose	-	builds acid from
Ref.: 23323	24265	Gluconate	-	builds acid from
Ref.: 23323	17859	Glutaric acid	+	growth
Ref.: 23323	17754	Glycerol	-	builds acid from
Ref.: 23323	28087	Glycogen	-	builds acid from
Ref.: 23323	17268	Inositol	-	builds acid from
Ref.: 23323	15443	Inulin	-	builds acid from
Ref.: 23323	16977	L-Alanine	+	growth
Ref.: 23323	30849	L-Arabinose	-	builds acid from
Ref.: 23323	18403	L-Arabitol	-	builds acid from
Ref.: 23323	16467	L-Arginine	+	growth
Ref.: 23323	17196	L-Asparagine	+	growth
Ref.: 23323	17561	L-Cysteine	+	growth
Ref.: 23323	18287	L-Fucose	-	builds acid from
Ref.: 23323	16015	L-Glutamic acid	+	growth
Ref.: 23323	18050	L-Glutamine	+	growth
Ref.: 23323	15589	L-Malate	+	growth
Ref.: 23323	17295	L-Phenylalanine	+	growth
Ref.: 23323	17203	L-Proline	+	growth
Ref.: 23323	62345	L-Rhamnose	-	builds acid from
Ref.: 23323	17266	L-Sorbose	-	builds acid from
Ref.: 23323	65328	L-Xylose	-	builds acid from
Ref.: 23323	17790	Methanol	+	growth
Ref.: 23323	320061	Methyl alpha-D-glu copyranoside	-	builds acid from
Ref.: 23323	43943	Methyl alpha-D-mannoside	-	builds acid from
Ref.: 23323	74863	Methyl beta-D-xylo pyranoside	-	builds acid from
Ref.: 23323	506227	N-Acetylglucosamine	-	builds acid from
Ref.: 23323	32816	Pyruvic acid	+	growth
Ref.: 23323	17814	Salicin	-	builds acid from
Ref.: 23323	28017	Starch	-	builds acid from
Ref.: 23323	16094	Thiosulfate	+	oxidation
Ref.: 23323	17151	Xylitol	-	builds acid from

Ref.: 23323	Oxygen tolerance	facultative aerobe
Ref.: 60723	Oxygen tolerance	aerobe
Ref.: 23323	Ability of spore formation	no

Culture and growth conditions

Ref.: 4903	Culture medium	BCYE-AGAR (DSMZ Medium 585), 37°C
Ref.: 4903	Culture medium growth	yes
Ref.: 4903	Culture medium link	https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium585.pdf

Ref.: 4903 **Culture medium** NUTRIENT AGAR (DSMZ Medium 1), 37°C, Rehydrate and grow lyophilized cells from the ampoule in 5 ml liquid broth medium 1. Subsequent subculturing may be carried out in liquid or agar medium 1 or on agar plates of medium 585

Ref.: 4903	Culture medium growth	yes
Ref.: 4903	Culture medium link	https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium1.pdf

Ref.: 23323	Culture medium	Trypticase soy
Ref.: 23323	Culture medium growth	yes

Ref.: 39533	Culture medium	MEDIUM 3 - Columbia agar
Ref.: 39533	Culture medium growth	yes
Ref.: 39533	Culture medium composition	Columbia agar (39.000 g);distilled water (1000.000 ml)

Temperatures

	Kind of temperature	Temperature
Ref.: 4903	growth	37 °C
Ref.: 23323	growth	15-42 °C
Ref.: 23323	growth	4 °C
Ref.: 23323	growth	45 °C
Ref.: 23323	optimum	37 °C
Ref.: 39533	growth	30 °C
Ref.: 60723	growth	30-37 °C

Ref.: 4903	Temperature range	mesophilic
Ref.: 23323	Temperature range	psychrophilic

Ref.: 23323 **Temperature range** mesophilic
 Ref.: 39533 **Temperature range** mesophilic
 Ref.: 60723 **Temperature range** mesophilic

Ref.: 23323 Ref.: 23323	pH	Kind of pH	pH
		growth	5.0-8.0
		optimum	6.0

Isolation, sampling and environmental information

Ref.: 4903 **Sample type/isolated from** industrial waste water
 Ref.: 4903 **Geographic location (country and/or sea, region)** Iztapalapa
 Ref.: 4903 **Country** Mexico
 Ref.: 4903 **Continent** North America

Ref.: 23323 **Sample type/isolated from** anaerobic sludge of a lab-scale UASB reactor treating the petrochemical wastewater of a purified terephthalic acid plant

Ref.: 60723 **Sample type/isolated from** Industrial waist water
 Ref.: 60723 **Country** Mexico
 Ref.: 60723 **Continent** North America

Isolation sources categories	Cat1	Cat2	Cat3
	#Engineered	#Biodegradation	#Anaerobic digester
	#Engineered	#Waste	#Wastewater
	#Environmental	#Aquatic	#Mud (Sludge)
	#Condition	#Anoxic (anaerobic)	-
	#Engineered	#Waste	#Industrial wastewater

Application and interaction

Ref.: 4903 **Biosafety level** 1 Risk group (German classification)

Molecular biology

Ref.: 4903 **GC-content** 68.5 mol%



	Sequence database	Sequence accession description	Sequence accession number	Sequence length(bp)	Associated NCBI tax ID
Ref.: 4903	GenBank Direct submission		AF273081		

Strain availability

[Ref.: 4903](#) **Culture collection no.** CCUG 55772, DSM 13099, ATCC 700918, CIP 106457

[Ref.: 4903](#) **Strain history** <- A. S. Ouattara, IRD; AMX 51 <- S. Thierry

Associated Passport(s) in StrainInfo

[Ref.: 20218](#) 371214 - <http://www.straininfo.net/strains/371214>

[Ref.: 20218](#) 118697 - <http://www.straininfo.net/strains/118697>

[Ref.: 20218](#) 371213 - <http://www.straininfo.net/strains/371213>

References

[Ref.: 4903](#) Leibniz Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Curators of the DSMZ; DSM 13099

[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.: 23323](#) Aboubakar S. Ouattara, Essokazi A. Assih, S?bastien Thierry, Jean-Luc Cayol, Marc Labat, Oscar Monroy, Herv? Macarie Bosea minatitlanensis sp. nov., a strictly aerobic bacterium isolated from an anaerobic digester. IJSEM 53: 1247-1251 2003 (10.1099/ijms.0.02540-0, None)

[Ref.: 39533](#) None; Curators of the CIP; None

[Ref.: 60723](#) Culture Collection University of Gothenburg (CCUG); Curators of the CCUG; CCUG 55772

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