Class

Actinobacteria

Subclass

Actinobacteridae

Order

Actinomycetales

Suborder

Streptosporangineae

Family

Streptosporangiaceae

Genus

Planobispora

The Genus Planobispora

To the genus *Planobispora* belong two species *Planobispora longispora* and *rosea.*

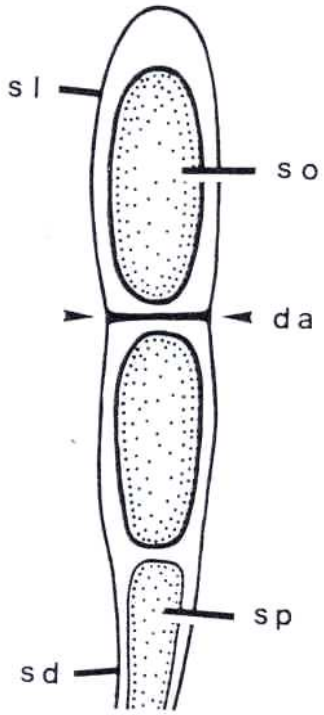
Substrate and aerial mycelia are developed on agar media. Substrate hyphae (0,5 – 2,0 µm in diameter) are irregulary branched occasionally septate, and nonfragmenting. Aerial hyphae (1,0 µm in diameter) are sparsely branched and rarely septate. Cylindrical to clavate spore vesicels/sporangia (1,0-1,2 µm wide x 6,0-8,0 µm long), each containing a longitudinal pair of spores, are formed singly or in bundles on short ramifications of the aerial hyphae. The vesicular envelope is smooth and contains fibrillar elements. A transverse septum or diaphragm connected to the vesicular envelope divides the two spores. The spores (zoospores) are straight or slightly curved with rounded ends and are motile by means of peritrichous flagella. They become motile only after being dispersed for some time and usually germinate with one or two polar germ tubes. Colonies grown on agar media are flat or occasionally elevated. The substrate mycelium either is without distinctive color or is rose-colored. The aerial mycelium which is developed only on certain agar media, is white or with a light rose tinge. Grows well at 28-40℃.

Cell wall contains meso DAP and the whole-cell hydrolysate contains madurose as the diagnostic sugar (cell wall type III/B). The cell envelope contains straight-chain acids, iso- and 10-methyl-branched acids, and unsaturated fatty acids; anteiso-branched acids are not present. Contain diphosphatidylglycerol, phosphatidylethanolamine, phosphatidylinositol and unknown glucoseamine-containing phospholipids. Di- and tetrahydrogenated menaquinones are the major isoprenologs. Isolated from soil.

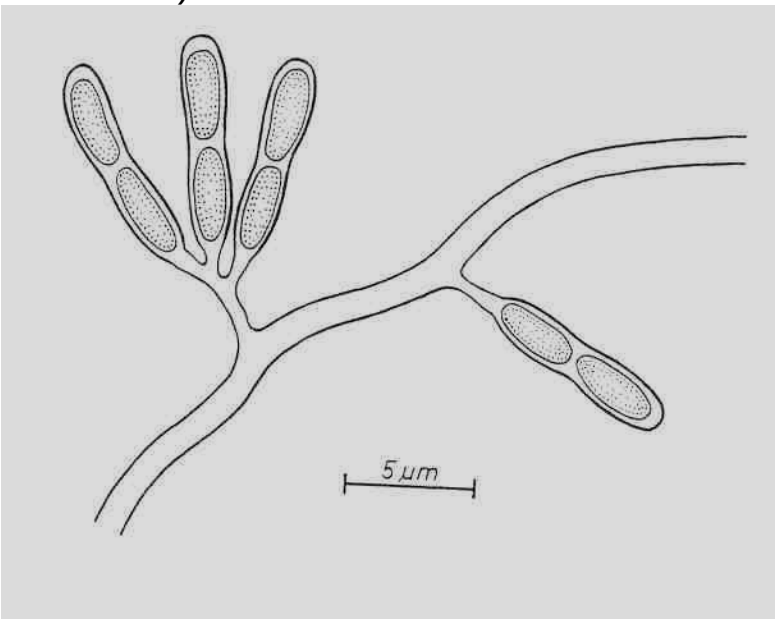
Type species is *Planobispora longispora.*

Lit.: Thiemann, J. E. and G. Beretta. 1968
A new genus of the Actinoplanaceae. *Planobispora* gen. nov.
Arch. Mikrobiol. 62: 157-166

Sporangium of *Planobispora* (Vobis 1986)
sp - Sporangiophor
sd - Sheath
sl - Sporangium envelope
so - Spore
da - Separating diaphragm



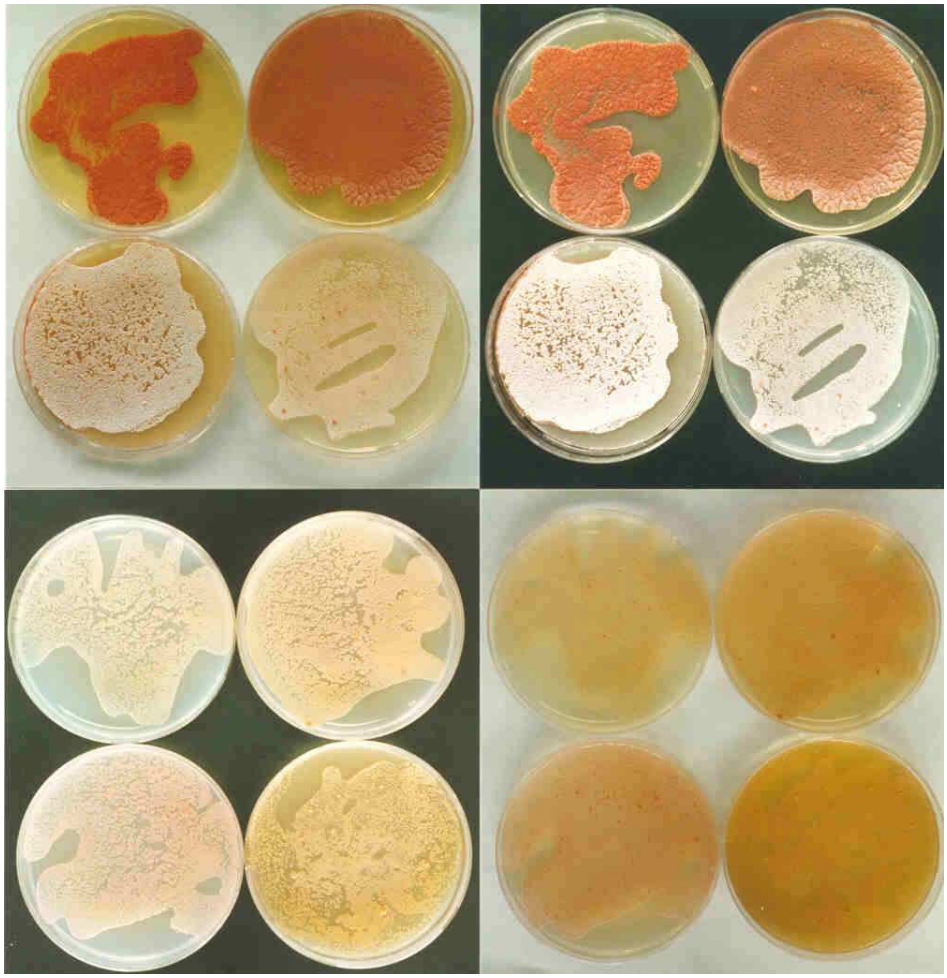
Aerial hyphae of Planobispora species bearing single and bundeled sporangia (Vobis 1989)



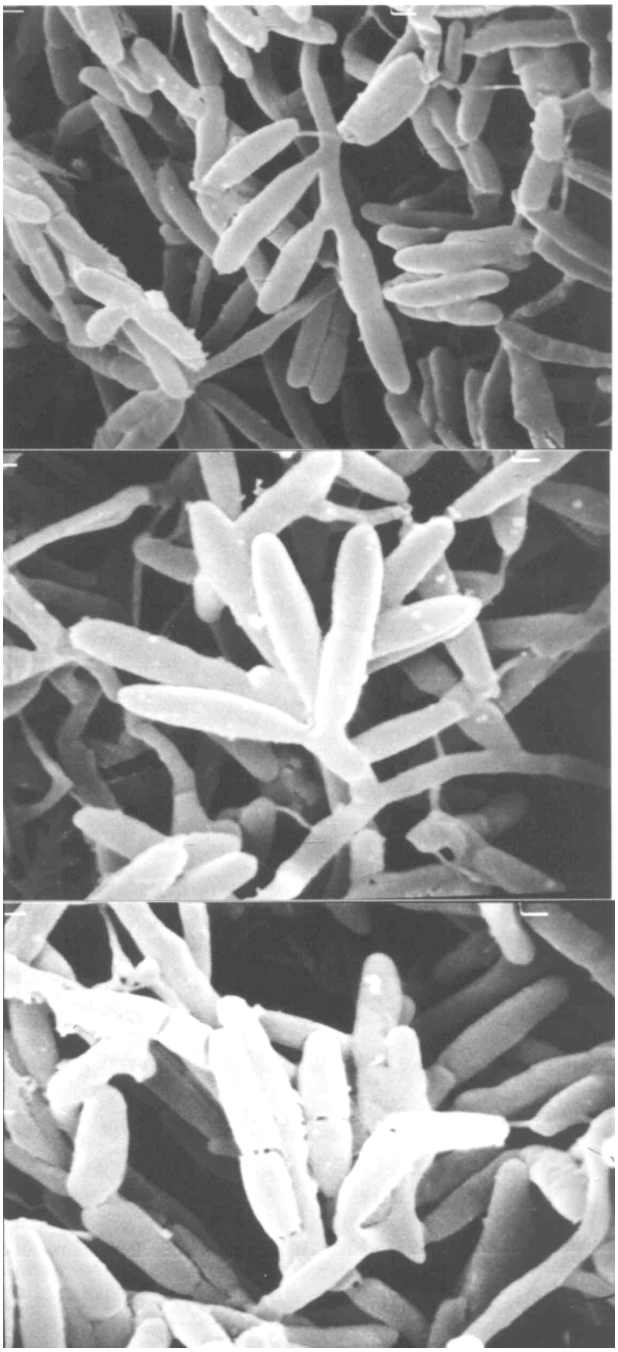
Genus Identity Card

Genus	***Planobispora***
Wall chemotype	meso-DAP (type III)
Whole cell sugar pattern	madurose
Fatty acid pattern	iso C 16:0, 10 methyl C 17:0
Major menaquinone (MK)	-9(H_2, H_4)
Phospholipidtype	phosphatidylethanolamine (type IV)
Mol% G+C of DNA	70-71
Morphology	substrate hyphae irregular branched, aerial hyphae are sparsely branched, cylindrical to clavate spore vesicles/sporangia, each containing a longitudinal pair of spores
Type species	*Planobispora longispora*

Planobispora rosea



Planobispora rosea



Name: PLANOBISPORA
Authors: Thiemann and Beretta 1968
Status: Approved Lists
Type species: P. longispora
Literature: Int. J. Syst. Bacteriol. 30:344 (AL)

Name: ***Planobispora longispora* (Type species)**
Authors: Thiemann and Beretta 1968
Status: Approved Lists
Literature: Int. J. Syst. Bacteriol. 30:345 (AL)
Risk group: 1 (German classification)
Type strain: ATCC 23867, DSM 43041

Name: *Planobispora rosea*
Authors: Thiemann 1970
Status: Approved Lists
Literature: Int. J. Syst. Bacteriol. 30:345 (AL)
Risk group: 1 (German classification)
Type strain: ATCC 23866, DSM 43051

Fatty acid pattern:

13 : 0		2,0			
14 : 0		5,0	17 : 0		8,0
15 : 0		4,0	17 : 0	10methyl	2,0
16 : 0	Iso	2,0	18 : 1	cis 9	21,0
16 : 1	cis 9	7,0	18 : 0		3,0
16 : 0		22,0			
16 : 0	10methyl	1,0			
17 : 1	cis 9	20,0			

Planobispora longispora
A – Agar plates medium 5006, 5318, 5322, 5337 with and without tyrosine

Genus: ***Planobispora*** **FH 2231**
Species: ***longispora***
Numbers in other collections: CBS 115.69

Morphology:

	G	R
ISP 2	good	beige
	A	SP
	none	none
	G	R
ISP 3	good	beige
	A	SP
	none	none
	G	R
ISP 4	good	beige
	A	SP
	none	none
	G	R
ISP 5	good	beige
	A	SP
	none	none
	G	R
ISP 6	sparse	beige
	A	SP
	none	none
	G	R
ISP 7	good	beige
	A	SP
	none	yellow

Spore chains: only spore pairs Spore surface: smooth
Sporangia: Fragmentation:

Melanoid pigment: - - - -
NaCl resistance: 2,5 %
Lysozyme resistance: -
pH: Value- Optimum-
Temperature : Value- Optimum- 30 ℃

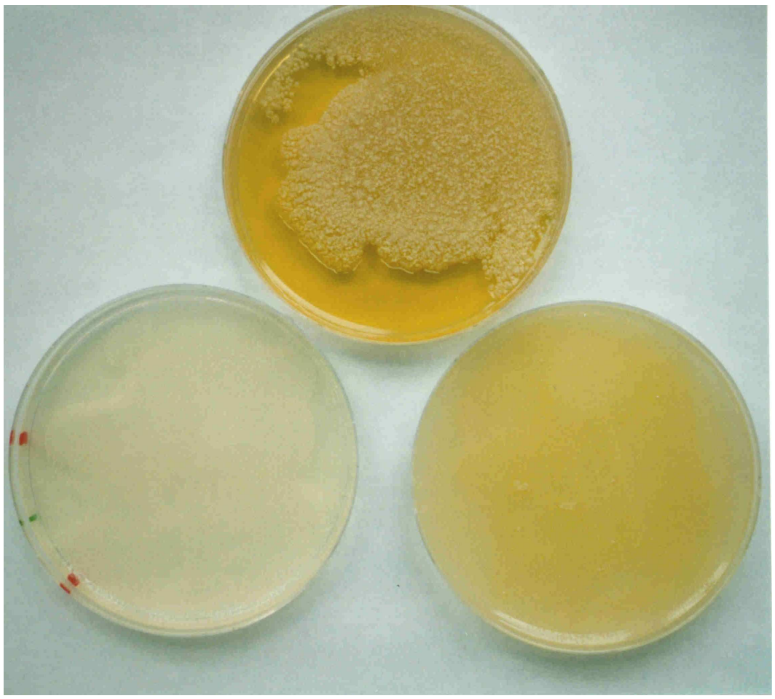
Carbon utilization:

Glu	Ara	Suc	Xyl	Ino	Man	Fru	Rha	Raf	Cel
+	+	-	-	-	-	+	-	-	-

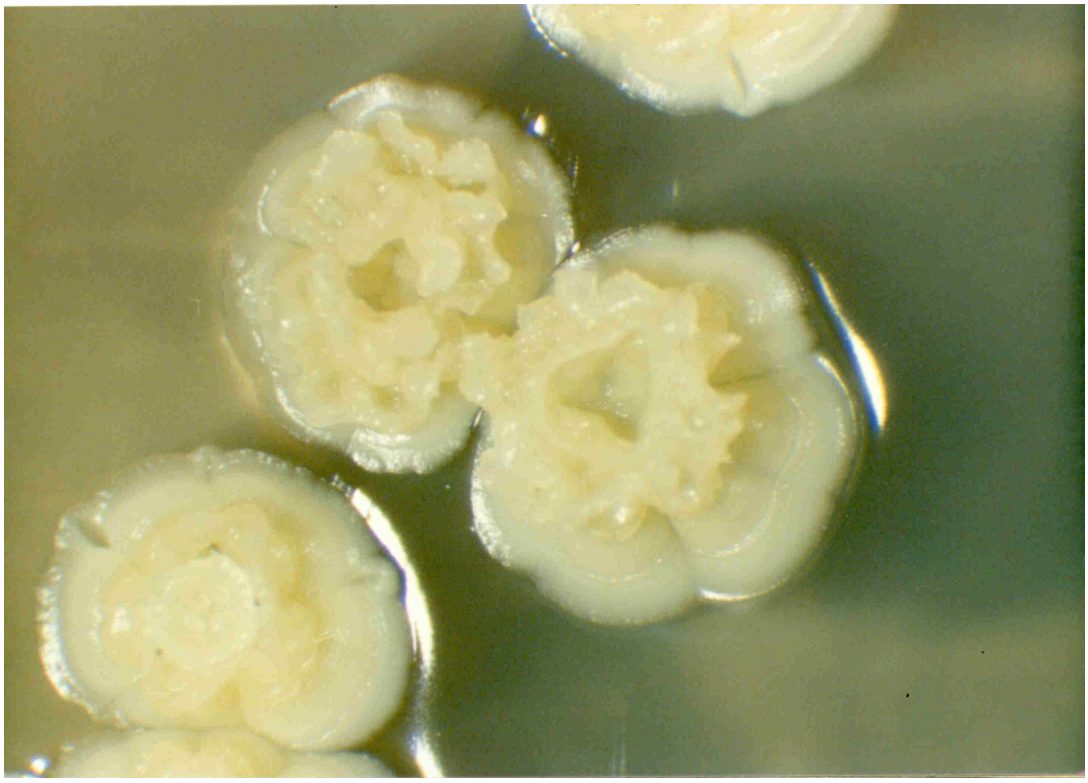
Enzymes:

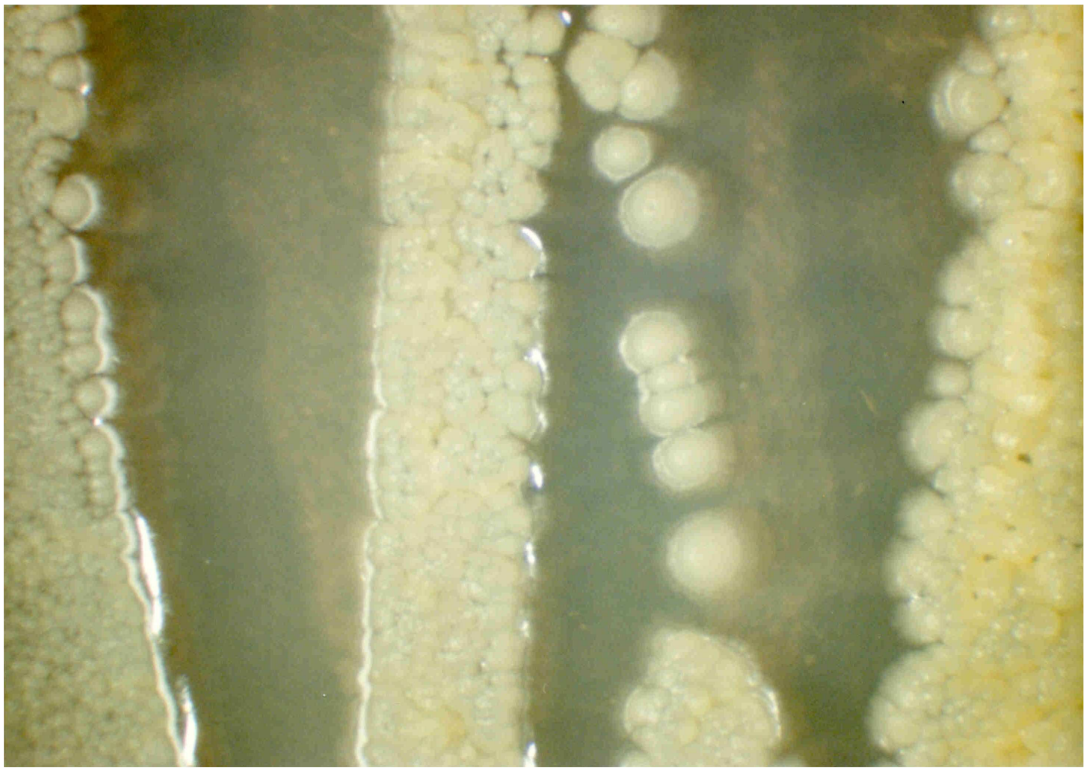
Gel	Cit	Ure	Arg	Onp	Trp	Lys	Odc	VP	Ind	H2S
+	-	-	-	+	-	-	-	-	-	-

2+ 3+ 4+ 5- 6+ 7+ 8- 9+ 10+ 11+ 12+ 13- 14+ 15- 16+ 17- 18+ 19- 20-

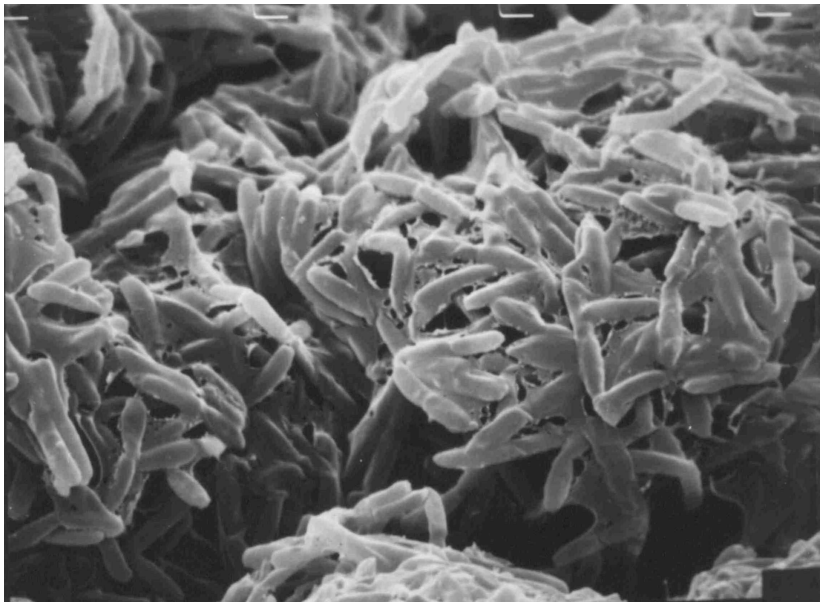


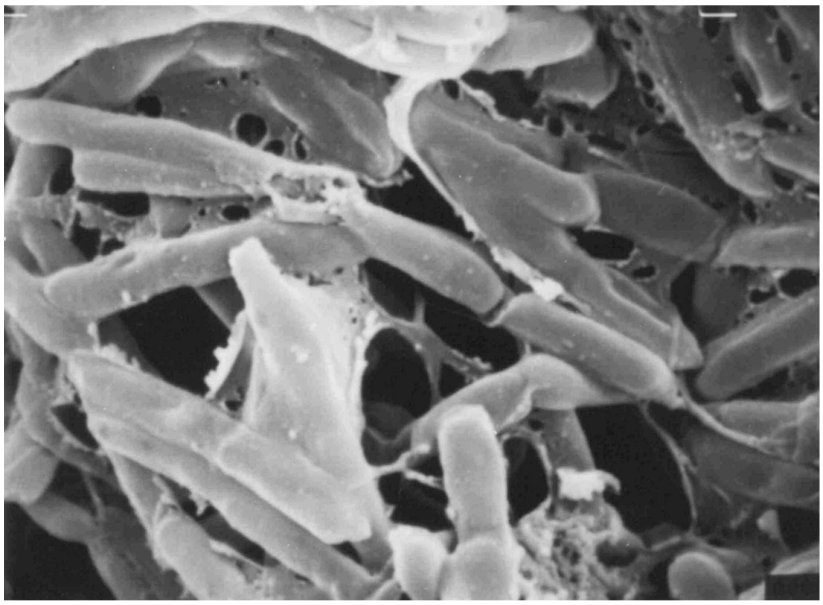
Planobispora longispora
B and C – Agar plates medium 5265, 5315 and 5317





Planobispora longispora
D – Colony detail on medium 5265
E – Colony detail on medium 5317





Planobispora longispora
Sporangia in SEM
F x 3.500 G x 10.000