Class

*Actinobacteria*

Subclass

*Actinobacteridae*

Order

*Actinomycetales*

Suborder

*Streptosporangineae*

Family

*Streptosporangiaceae*

Genus

*Thermobispora*

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# The Genus Thermobispora

To the genus *Thermobispora* belongs the species *Thermobispora bispora.*

The species is gram-positive, aerobic, non-acid-fast, thermophilic and produces substrate mycelium with hyphae which are 0,5 to 0,8 µm in diameter. The aerial mycelia branch monopodially and bear longitunal pairs of spores which are usually arranged alternately on side branches arising from the main hyphae. The smooth-surface spores are oval to spherical and nonmotile. Fragmentation of mycelia is not observed on agar or in liquid media. Neither sclerotia, sporangia, nor any other special structure is formed.

The cell wall contains a major amount of meso-diaminopimelic acid, and the whole-cell-hydrolysate contains madurose and galactose. MK-9 ($H_0$) is the major menaquinone. The phospholipid pattern type is type PIV, and the phospholipids include a small amount of glucosamine-containing phospholipids. 14-methylpentadecanoic acid is the major fatty acid. The G+C content of the DNA is 70 mol%.

Type species is *Thermobispora bispora.*

Lit.: Wang, Y., Z. Zhang and J. Ruan. 1996
A proposal to trasfer *Microbispora bispora* (Lechevalier 1965) to a new genus, *Thermobispora* gen. nov. , as *Thermobispora bispora* comb. nov.
Int. J. System. Bacteriol. 46: 933-938



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# Genus Identity Card

| **Genus** | ***Thermobispora*** |
|---|---|
| Wall chemotype | meso-DAP (type III) |
| Whole cell sugar pattern | madurose, galactose |
| Fatty acid pattern | 14 methyl pentadecanoic acid |
| Major menaquinone (MK) | -9($H_0$) |
| Phospholipidtype | phosphatidylethanolamine type IV |
| Mol% G+C of DNA | 70 |
| Morphology | substrate hyphae irregular branched, aerial hyphae with longitudinal pairs of spores |
| Type species | *Thermobispora bispora* |

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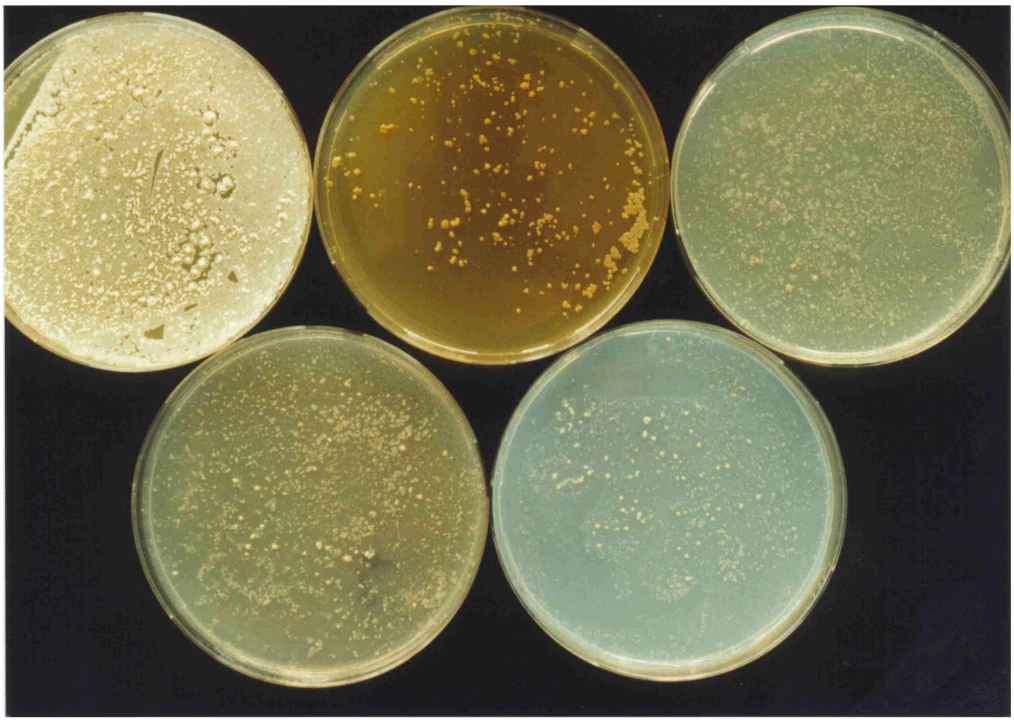
| | |
|---|---|
| Name: | THERMOBISPORA |
| Authors: | Wang et al. 1996 |
| Status: | New Genus |
| Type species: | T. bispora |
| Literature: | Int. J. Syst. Bacteriol. 46:937 |

| | |
|---|---|
| Name: | ***Thermobispora bispora* (Type species)** |
| Authors: | (Henssen 1957) Wang et al. 1996 |
| Status: | New Combination |
| Literature: | Int. J. Syst. Bacteriol. 46:937 |
| Risk group: | 1 (German classification) |
| Type strain: | ATCC 19993, DSM 43833 |
| Synonyms: | *Microbispora bispora* (basonym) |



***Thermobispora bispora***
A – Agar plates medium 5006, 5318, 5322, 5337 with and without tyrosine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**Genus:** ***Thermobispora*** **FH 2680**
**Species:** ***bispora***
**Numbers in other collections: IFO 14880**

Morphology:

| | | |
|---|---|---|
| | G | R |
| ISP 2 | good | beige |
| | A | SP |
| | none | none |
| | G | R |
| ISP 3 | good | dahlia yellow |
| | A | SP |
| | white | 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 | good | beige |
| | A | SP |
| | none | none |
| | G | R |
| ISP 7 | good | beige |
| | A | SP |
| | none | none |

Spore chains: Spore surface:
Sporangia: Fragmentation: -

**Melanoid pigment:** **- - - -**
**NaCl resistance:** 0 %
**Lysozyme resistance:** -
**pH:** Value- Optimum-
**Temperature :** Value- Optimum- 45 ℃

**Carbon utilization:**

| Glu | Ara | Suc | Xyl | Ino | Man | Fru | Rha | Raf | Cel |
|---|---|---|---|---|---|---|---|---|---|
| | | | | nd. | | | | | |

**Enzymes:**


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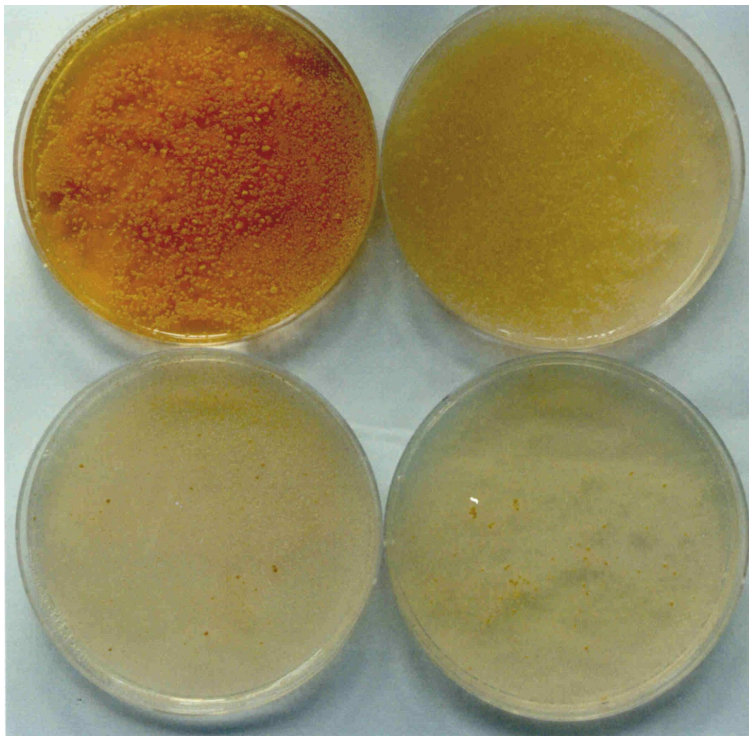

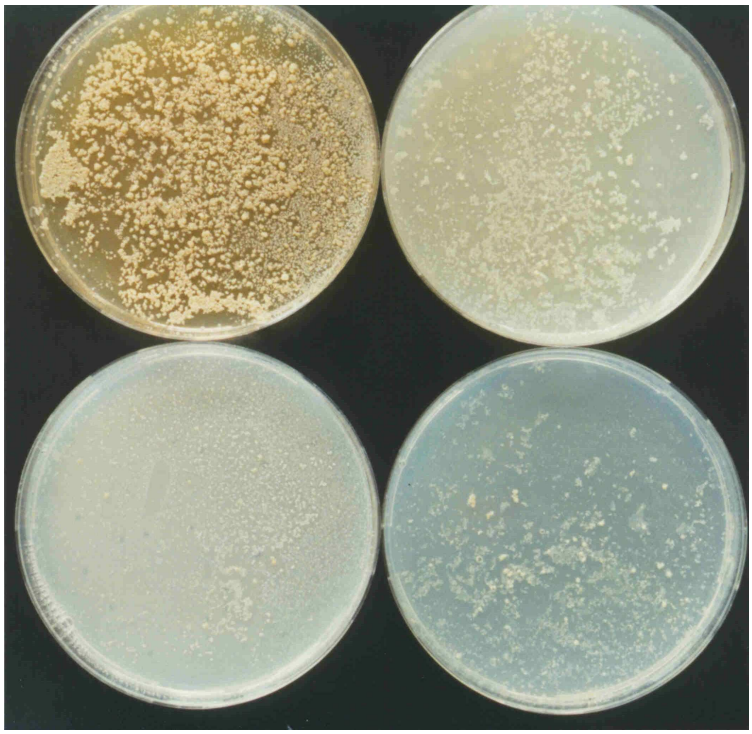

***Thermobispora bispora***
B and C – Agar plates medium 5265, 5315, 5317 and 5323

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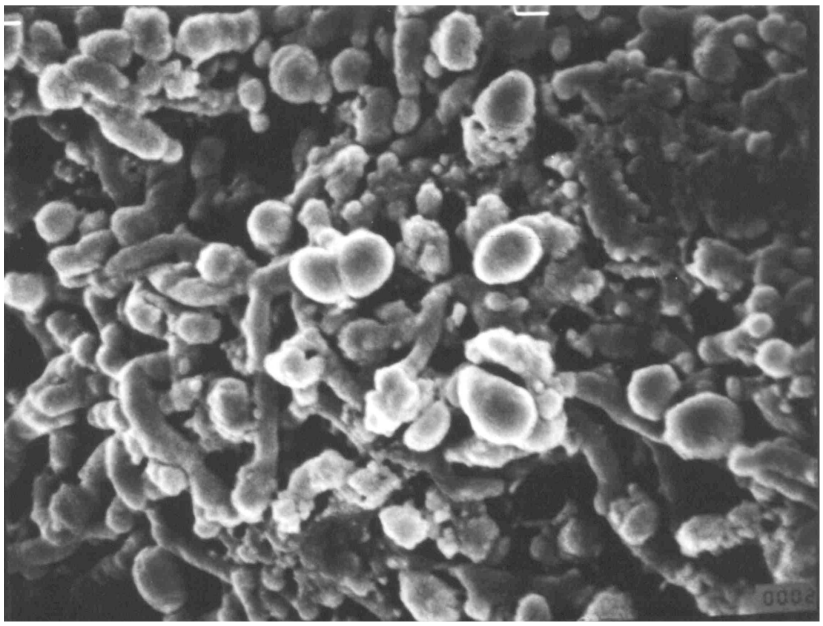

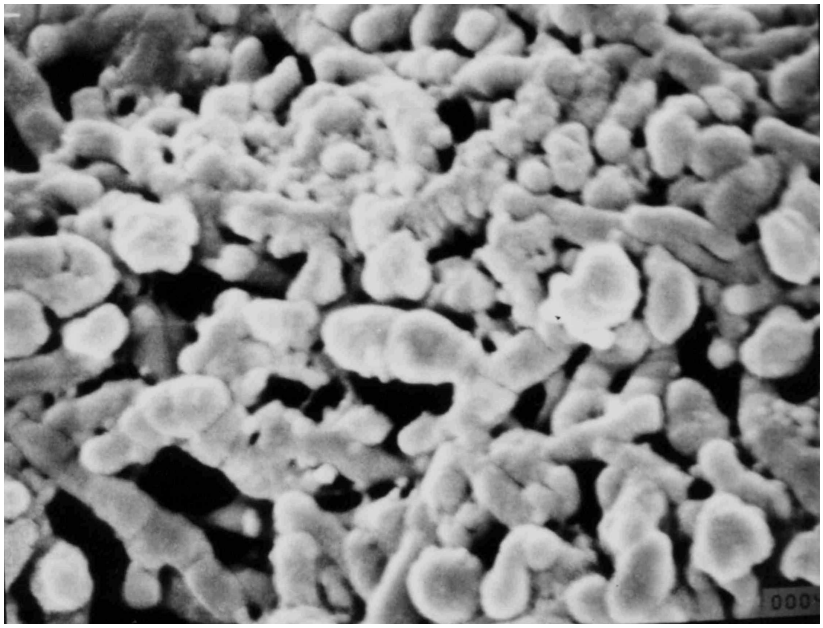

***Thermobispora bispora***
Spores and spore pairs in SEM
D x 7.500  E x 10.000



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