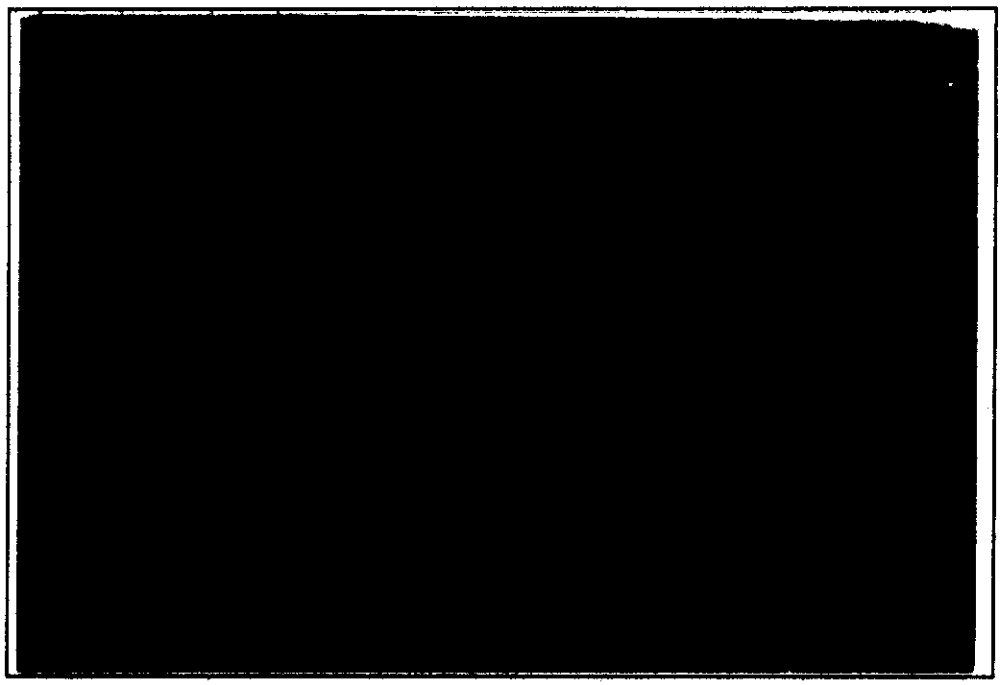

Fig. (52) Micromorphology of aerial hyphea of isolate No. G-115(X 400)

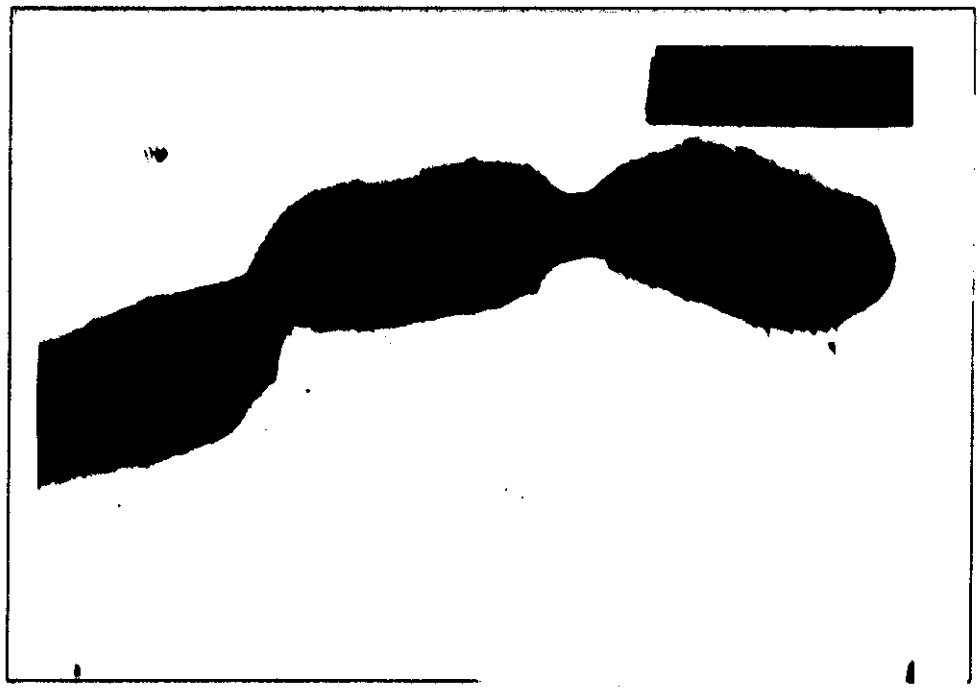

Fig. (53) Electron micrograph of spore chains of isolate No. G-115
(X 25.000)

3. **Sensitivity of substrate pigments to pH:** Isolate G-115 does not produce any pH sensitive pigments.
4. **Color of diffusible pigments:** No diffusible pigments are produced by isolate G-115 on the used agar media.
5. **Sensitivity of diffusible pigments to pH:** No pH sensitive pigments are produced by isolate G-115.
6. **Melanin pigments production:** Neither on peptone yeast iron agar nor on tyrosine agar, isolate G-115 produces melanin pigments.
7. **Growth in the presence of inhibitory compounds:** Growth of isolate G-115 is sensitive to sodium chloride (13%), sodium azide (0.02%), phenylethanol (0.01% and 0.3%) and thallous acetate (0.001% and 0.01%), but not sensitive to sodium chloride (4%, 7%, and 10%), sodium azide (0.01%), phenol (0.1%), potassium tellurite (0.001% and 0.01%) or crystal violet (0.0001%).
8. **Utilization of sole carbon sources:** Isolate G-115 succeeds to utilize, L-arabinose, sucrose, D-xylose, meso-ionsitol, mannitol, D-fructose, L-rhamnose, raffinose, D-melezitose, D-mannose, D-lactose, inulin, adonitol, trehalose, D-melibiose, dextran, D-galactose, cellobiose, xylitol, sodium acetate, sodium citrate, sodium malonate, sodium propionate and sodium pyruvate, but does not utilize salicin.
9. **Utilization of sole nitrogen sources:** Isolate G-115 succeeds to utilize, DL-α-amino-n-butyric acid, L-cystein, L-valine, L-threonine, L-serine, L-phenylalanine, L-histidine, L-arginine, L-hydroxyproline and potassium nitrate, but does not succeed to utilize L-methionine.
10. **Growth at different temperatures and pH:** Isolate G-115 gives good growth at 37°C , but fails to give any growth at 4°C, 10°C or 45°C , it gives good growth at pH= 7 while fails to give any growth at pH= 4.3.

11. **Some enzymatic activities:** Isolated G-115 exhibits well expressed lipolytic, keratenolytic, cellulolytic, pectinolytic and chitinolytic activities, it coagulates and peptonizes milk, but does not reduce nitrates to nitrites, or produce hydrogen sulphide.
12. **Degradation of some organic complex compounds:** Isolate G-115 succeeds to degrade adenine, xanthine, DNA, RNA, tween 80, starch, xylan, testosterone, urea, allantoin, gelatin, aesculin and arbutin, but fails to degrade hypoxanthine, guanine, elastin, L-tyrosine or casein.

C) Biological activities

1. **Antimicrobial activities:** The antimicrobial potentialities of isolate G-115 when cultivated in fish meal extract liquid shaken medium, it produces antimicrobial substances that inhibit the growth of only, ***Sacch.cerevisia***, but does not produce any antimicrobial substances that inhibit the growth of ***E.coli***, ***B.subtilis***, ***S.aureus***, ***C.albicans***, ***Bot.faba*** or ***A.terreus***. While when cultivated in starch nitrate liquid shaken medium, shows that, it does not produce any antimicrobial substances that inhibit the growth of the used test organisms. This means that isolate G-115 produces only antiyeast substances when cultivated in fish meal extract liquid shaken media, but not in cultivation in starch nitrate liquid shaken medium. **(Fig.54).**
2. **Sensitivity of growth to some antibiotics:** Growth of isolate G-115 is sensitive to gentamycin, neomycin, streptomycin, tobramycin, rifampicin, cephaloridine, vancomycin, dimethylchlorotetracycline, oleandomycin and lincomycin, but not sensitive to penicillin G. **(Table 18).**

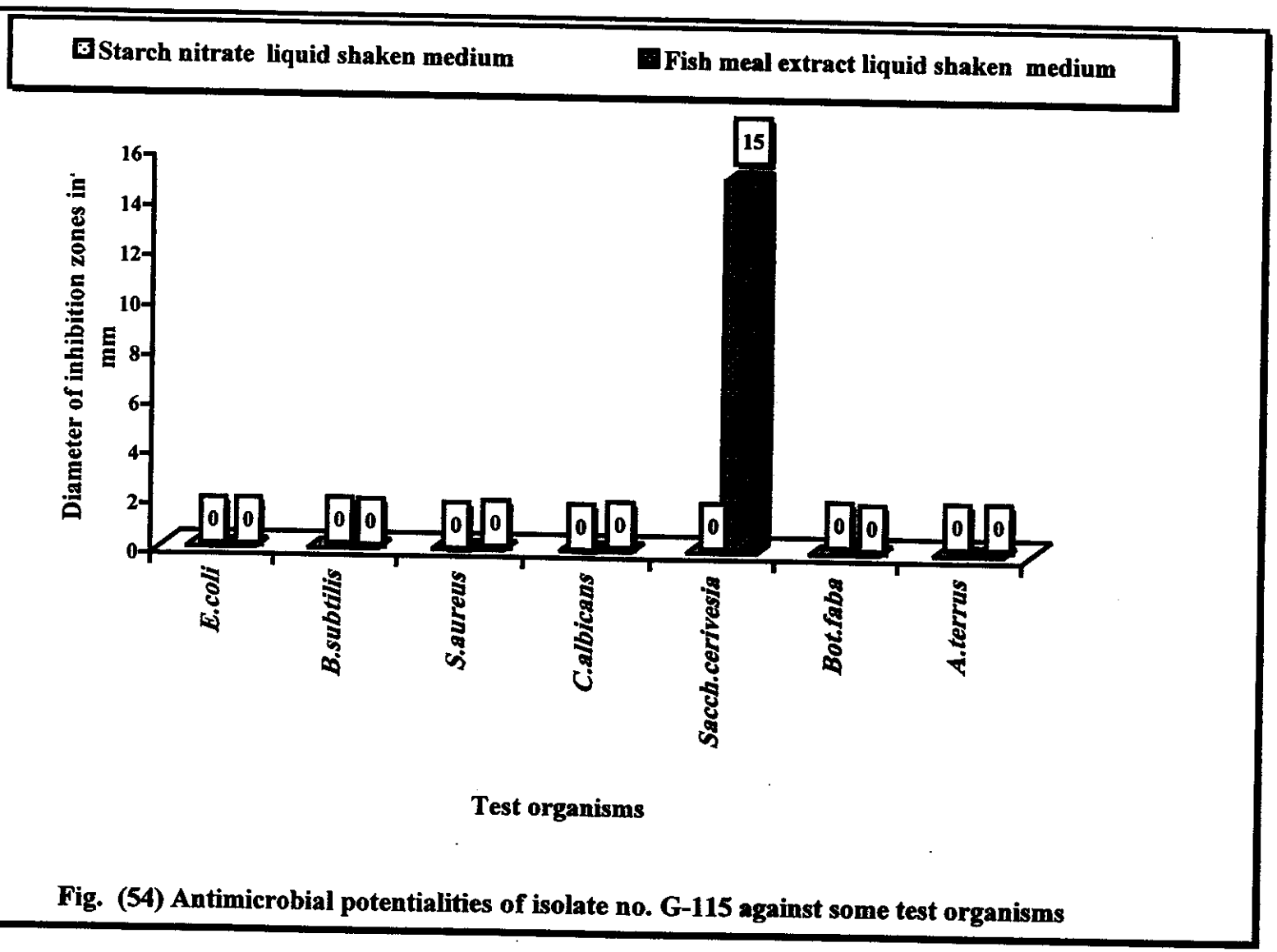

Fig. (54) Antimicrobial potentialities of isolate no. G-115 against some test organisms

Table (18): Sensitivity of isolate No. G-115 to different antibiotics

Antibiotic concentrations ($\mu g/ml^{-1}$)		Zones of inhibition
gentamycin	(100)	26
neomycin	(50)	26
streptomycin	(100)	40
tobramycin	(50)	26
rifampicin	(50)	26
cephaloridine	(100)	10
vancomycin	(100)	26
dimethylchlorotetracycline	(500)	16
oleandomycin	(100)	16
lincomycin	(100)	10
penicillin G	(10 i.u.)	0

* Figures indicate width of zones of inhibition in mm.

Taxonomic identification: The representative isolate of group 18 is identified as ***Streptomyces canofumeus*** **(Krassilnikov, 1970).**