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Newly mapped chromosomal loci of

Neurospora crassa

Information has been published. The following loci have not been adequately documented elsewhere.

Numerous additional gene loci have been established and mapped since the 1982 compendium of Perkins et al. (Microbiol. Rev. 46:426-570). These are listed in current updates of the maps (Perkins 1987 Genetics Maps 4: Fungal Genetics Newsl. 34), where references are given if information has been published.

acr-5: acriflavine resistant-5

IIR. Between arg-5 (6%) and pe (9%).

Allele JLC74, used for mapping, is readily storable on acriflavine, 50 g/ml. This allele was spontaneous in a selective plating of ascospores from Sk-2^K x sc leu-1 A. Isolated 1984 by J.L. Campbell. Scoring does not require presence of a morphological mutation, in contrast to allele KH161 as described by Hsu 1973 Neurospora Newsl. 20:39. Stocks have been deposited that are free of Sk-2^K.

chol-3: choline-3

VR. Between at (18%) and al-3 (19-47%)

Requires choline. Growth subnormal even on optimal supplement. Allele S2586 obtained and requirement identified in E.L. Tatum laboratory.

chol-4: choline-4

IV. Linked cot-1 (32%)

Requires choline. Growth subnormal even on optimal supplement. Allele S1089 obtained and requirement identified in E.L. Tatum laboratory.

cr-4: crisp-4

IV. Linked pdx-1 (6%), cot-1 (22%).

Early conidiation without aerial hyphae, resembling cr-1 (LePage 1975 Heredity 84:293). Allele LP558 from R.W.F. LePage via M.L. Pall.

cya-8: cytochrome a-8

VIII. Left of T(ALS179) (5%), cyt-7 (7%), adh (19%), nic-3 (39%). Leftmost marker in VII.

Deficient in cytochrome aa3; phenotype similar to [mi-3] (H. Betrand, personal communication). Very slow, sparse, transparent growth, little conidiation. Many germinants from ascospores fail to survive. Germinants are readily rescued and maintained in heterokaryons with a^ml ad-3B cyh-1. Origin: Appears recurrently among progeny of eas: easily wettable (UCLA191). Does not require the presence of eas for expression.

hss-1: histidine sensitive-1

IVR. Linked cot-1 (19%), cys-4 (2%)

Sensitive to histidine (0.5 mg/ml) but not to UV (D.E.A. Catcheside, personal communication). Not sensitive to MMS or gamma-rays (A.L. Schroeder, personal communication). Allele MN332 isolated by D.E.A. Catcheside following filtration enrichment. Mapping by A.L. Schroeder, Ian Ross, Perkins and Pollard.

oak: oak

VR. Between un-9 (7%) and his-6 (6%). Recombines with smco-6.

Growth is initially semicolonial. Hyphae form adherent aggregates, atop which conidia form in dense balls. Under some conditions, a trunk of hyphae may produce branches with massed conidia that are held free above the agar. Allele R2358 from S.R. Gross.

pen-1: perithecial neck-1

VII. Linked csp-2 (4%)

Perithecia are barren when pen-1 is used as female, even if the fertilizing parent is pen⁺. An ostiole is present, but no beak. No ascospores are extruded. A few croziers and asci are present within the beakless perithecia, and a few mature ascospores may be formed. Perithecia are fully fertile and morphologically normal in the reciprocal cross, where pen-1 is used as male to fertilize pen⁺. Development is about equally abnormal in pen female x pen⁺ male and in pen x pen. Perithecia are normal and fertile when the female parent is heterokaryotic for pen in the cross (pen-1;un-3 ad-3 nit-2 A + pen⁺; a^{m1} ad-3B cyh-1) female x pen-1 a male, even though all asci are homozygous for the mutant pen-1 allele. Allele DL413 was obtained and described by DeLange and Griffiths 1980 Genetics 96:367-378. Cytology by N.B. Raju. Mapping by Perkins, Pollard and F.M. Delagi

ufa(P73B118): unsaturated fatty acids

IVR. Linked to met-5 (7%). (Likely a recurrence of ufa-1/ufa-2, which were mapped to IV or V by Scott 1977, J. Bacteriol. 130:1144-1148)

Requirement and stability similar to those described for ufa-1 and ufa-2, stocks of which have been lost. Responds strongly to oleic acid and Tween 80 (oleic + palmitic), not to palmitic, Tween 40 (palmitic), stearic or linolenic acid, and weakly to linoleic (S. Brody, personal communication). Grows well on 1% Tween 80 supplement, but vegetatively unstable. Reversions produce conidiating sectors. Maintained reliably on minimal medium in heterokaryon with a^{m1} ad-3B cyh-1. Unripe, light colored ascospores are probably enriched for revertants. Reliable mapping should be based on ufa⁻ progeny. Perithecia are barren in ufa x ufa crosses (made using heterokaryons).

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