

**IN VITRO COMPLEMENTATION
AT THE TWO DIFFERENT LOCI OF
ASPERGILLUS NIDULANS**

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In the present studies it was assessed by two fpa (para fluorophenyl alanine) resistant mutants ribo A₁, bi A₁, fpa D₁₁ and ribo A₁, bi A₁, fpa K₆₈ which are dominant and semidominant to their wild type. They are permease deficient and non-allelic to each other. In diploid they behave like wild type¹. By this behaviour it can be assumed that they are complementary genes involved in a reaction sequence segregating inde-

pendently with the phenotypic ratio of 9:7. The observations were made by the extraction of protein by cold osmotic shock treatment method². The procedure was standardised and the capacity of amino acid binding of C¹⁴ leucine was determined in three strains. An equal amount of protein was mixed and total activity of C¹⁴ leucine was assayed. The observations are recorded in Table I and Fig. 1.

The results reveal that C¹⁴ leucine amino acid bindings are different in all these three strains but when the cross-reacting material of the two mutants are brought together, it resembles the wild type, confirming the results of *in vitro* complementation. This explains that the protein of these two mutants interacts with the fusion of cross-reacting material and react like heterogeneous component containing

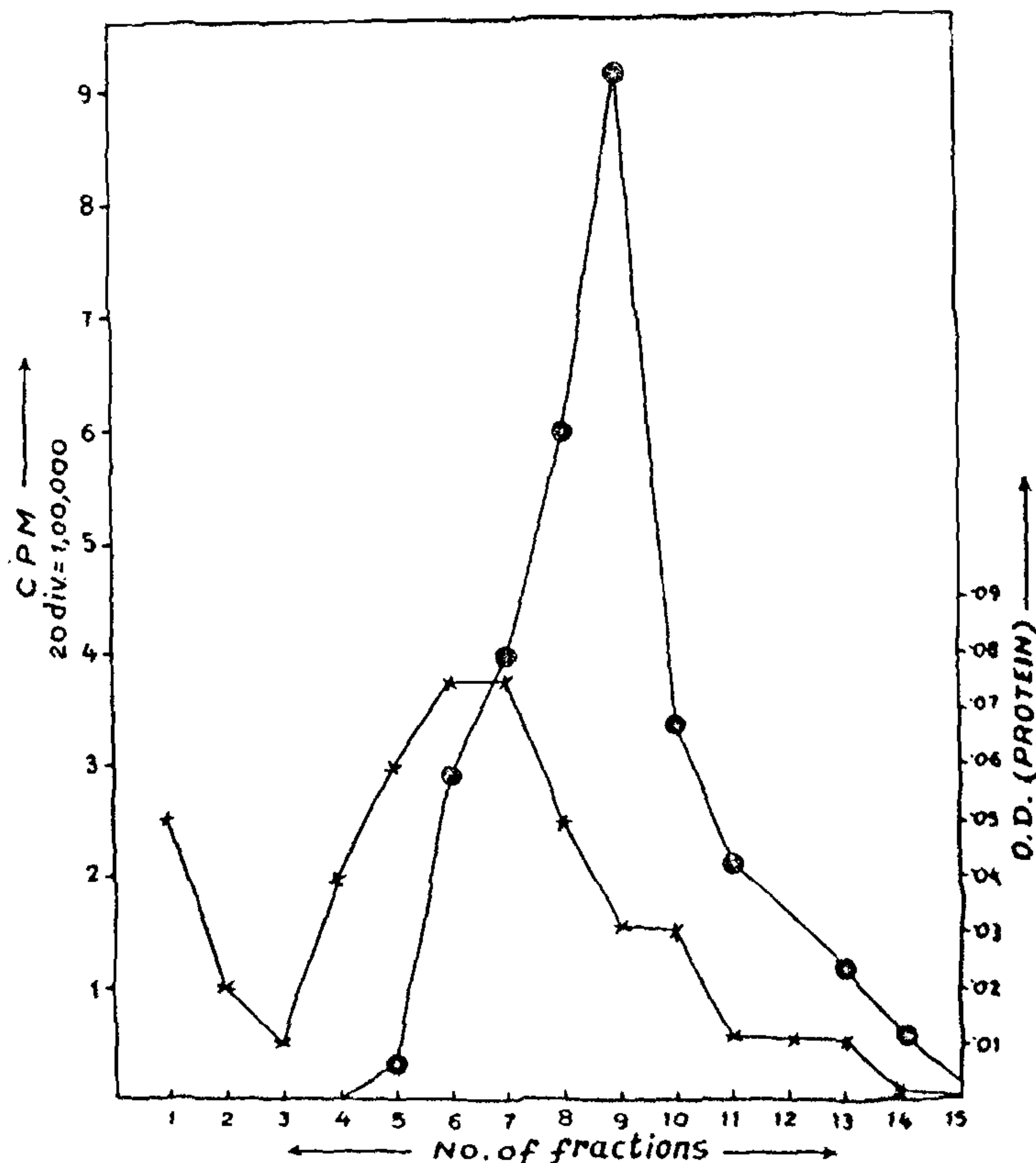


FIG. 1. Binding protein of C¹⁴ leucine in wild type (●-●) and two mutants (x-x) showing *in vitro* complementation.

TABLE I
Amount of binding protein of two mutants and wild type in their fractions

Name of the mutants	Binding fraction	Total protein eluted	Amino acid binding in cpm/mg/protein
ribo A ₁ , bi A ₁ (Wild type)	7	1.5 mg	5.7 × 10 ⁷
ribo A ₁ , bi A ₁ , fpa K ₆₉	8	1.5 mg	2.9 × 10 ⁷
ribo A ₁ , bi A ₁ , fpa D ¹¹	9	1.5 mg	5.2 × 10 ⁶
fpa D ₂₄ + fpaK ₆₉	9	1.5 mg	4.6 × 10 ⁷

four subunits. Last component is normal type. Some segments of genetic material exert their effects directly, rather than the extra chromosomal product which is free to mix and interact in the cytoplasm. It is assumed that the chain of fpa D₁₁ and fpa K₆₉ is complementary to many contact points between them. The interaction between the amino acid residue and the adjacent chain showed the stability of multichain enzyme in complex nature. The folding of polypeptide chain, however, suggests how subunits interact.

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1. Verma and Sinha, Ph.D. Thesis, Delhi University, Delhi, 1973.
2. Neu and Happel, J. Biol. Chem., 1965, 240, 3685.

**SPODIOPOGON JAINII V. J. NAIR,
A. N. SINGH ET N. C. NAIR: A NEW GRASS
FROM MADHYA PRADESH, INDIA**

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Spodiopogon jainii V. J. Nair, A. N. Singh et N. C. Nair sp. nov.

Affinis *Spodiopogon rhizophorus* (Steud.) Pilger a qua tamen differt in culmis gracilibus; spiculis sparsim

pilosis, pilis purpurascens; glumis inferarum 5-7 nervis, apicibus truncatis, marginibus pilosis; glumis superis 7-nervis; paleis flosculorum inferorum apicibus rotundatis et aristis parvioribus.

Holotypus: Balaghat District, Supkhar, Lodhopara Forest, ± 800 m, 25th Sept. 1973, V. J. Nair 18431 (CAL). Isotypi in K, BSA et MH.

Spodiopogon jainii V. J. Nair, A. N. Singh et N. C. Nair sp. nov.

Annual herb growing in the crevices of rocks. Culms 50-60 cm long, slender; nodes glabrous. Leaf blades 5-13 × 1.5-3 cm, flat, elliptic-lanceolate, acuminate, sparsely villous on both sides. Petioles 1-6 cm long. Sheaths 6-10 cm long, glabrous. Ligules membranous, acute. Panicles 8-10 cm long, densely flowered with 2-3 nate spikelets. Rhachis jointed. Spikelets 1 sessile and 1-2 pedicelled together, sparsely hairy; hairs 2-3 mm long, turning purplish. Sessile spikelets 3.5-4 mm long, 2 flowered; lower glume 3.5-4 × 1.5-1.8 mm, broadly ovate, truncate at apex, 5-7 nerved; sparsely hairy, ciliate on the margins; upper glume 3.8-4 × 1.8-2 mm, broadly ovate, acute, mucronate at apex, 7-nerved, sparsely hairy; lower floret male; lemma ca. 3 × 1.8 mm, ovate-oblong, truncate and ciliate at apex, hyaline; palea ca. 4 × 1.25 mm, oblong, rounded at apex, faintly 1-nerved, hyaline; stamens 3, anthers ca. 2.5 × 0.3 mm, linear, filaments short. Upper floret bisexual: lemma ca. 2.5 × 0.8 mm, notched at the apex, awns 8-10 mm long, twisted; palea ca. 2 × 1.8 mm, obovate, ciliate at apex, hyaline; stamens 3, anthers ca. 3 × 0.4 mm, linear, filaments short; ovary ca. 0.2 mm long, ovate, styles ca. 2.3 mm long, slender; stigmas ca. 1.5 mm long, plumose. Pedicelled spikelets 3-3.5 mm long, 2-flowered; pedicels 2-3 mm long, ciliate on the margins; lower glume ca. 3 × 1.5 mm, ovate, truncate at apex, 5-7 nerved, sparsely hairy, ciliate on the margins; upper glume ca. 3.5 × 1.75 mm, ovate, acute, mucronate at apex, 7-nerved, sparsely hairy; lower floret male; lemma ca. 2.5 × 1 mm, ovate-oblong, truncate and ciliate at apex, hyaline; palea ca. 3 × 1 mm, oblong, acute, rounded at apex, faintly one-nerved, hyaline; stamens 3, anthers ca. 2 × 0.3 mm, linear, filaments short; upper floret bisexual; lemmas ca. 2 × 0.6 mm, notched at apex, awns 6-10 mm long; palea ca. 1.75 × 1.5 mm, obovate, ciliate at apex, hyaline; anthers ca. 3 × 0.3 mm, filaments short; ovary ca. 0.2 mm long, ovate; styles ca. 2 mm long, slender; stigmas ca. 1.3 mm long, plumose. Grains not seen.

Holotype: Balaghat District, Supkhar, Lodhopara Forest ± 800 m, 25th Sept. 1973, V. J. Nair 18431 (CAL). Isotypes in K, BSA and MH.