

ISTITUTO SIEROTERAPICO MILANESE

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Direzione Scientifica

Milano, 21/8/52

Sir Ronald Fisher
Dept. of Genetics
44, Storey's Way
Cambridge

My dear Professor,

I understand you are back from the States, now, and am writing essentially to congratulate you upon your knighthood. Rarely has such a honor been more deserved and I have been very pleased to hear that your government has at last thought of showing you some sign of gratitude.

There are no important news here, recent developments of E. coli, of which you already know, have not gone much further. However I am including, for your own amusement, some data. They are not worth a statistical analysis for two reasons: that they represent the scoring of prototrophic colonies as a whole, because I have not yet sit down to analyse them inside (but I know that they are often mixed), and that for some reasons they represent a pool of data among which some heterogeneity exists. However, they will be published in a paper sent to JGM (Journal of General Microbiology) because they represent clearly enough the point of the effect of F^+ conditions on linkage. However, you may be able to discover some interesting facts in them. The two hypotheses, which the Luederbergs and I are discussing at the moment are (i) the F^+ parent contributes a shorter chromosome, which has lost a (mostly localised) piece, (ii) there is a difference in the degree of ploidy of the F^+ and F^- parent, i.e. in some unexplained way the F^+ parent contributes one strand, and the F^- several, there being successive matings or a multivalent formed. As to the $F^+ \times F^+$ crosses, it is fairly clear that in such crosses one of the two parents behaves predominantly as an F^+ and the other as an F^- .

I have attended the Paris Congress of Biochemistry, where I was asked to give a paper on the genetics of antibiotics resistance. You will have heard of the developments of the plans for the Bellagio conference, as I understand you took part in the discussion of them. We shall have at Pallanza a symposium on microbial genetics, at the beginning of September, similar to the one which was held a year ago at

Copenhagen.

Everything is well with the children here. With best greetings,

Yours sincerely

Lena Cavall

Table 2

Frequencies of prototrophs from crosses TLB_1-S^r (A) x TLB_1+S^r (B). Selected: TLB_1+S^r

Crosses 1 and cross 4 : A, F⁻ ; B, F⁺

Crosses 2 and cross 5 : A, F⁺ ; B, F⁻

Cross 3 and cross 6 : A, F⁺ ; B, F⁺

Map : $\theta_1-S-Mal-Xyl-gal-Lac-Ara(TL)$

Crosses 1,2,3 : A, Lac-Gal-Mal-Xyl-Ara- ; B, Lac+Gal+Mal+Xyl+Ara+

Crosses 4,5,6 : A, Lac+Gal+Mal+Xyl+Ara+ ; B, Lac-Gal-Mal-Xyl-Ara-

In the first and fifth columns are indicated the phenotypes of recombinants in respect of the five sugar markers (abbreviated to L, G, M, X, A).

Cross	1	2	3		4	5	6
LGMXA	F-xF+	F+xF-	F+xF+	LGMXA	F-x F+	F+ x F-	F+ x F+
-----	1	1	2	+++++	1		
-----+	290	25	315	++++-	30		1
----+--				+++--			
---+---				++---			
-+----		1		+----			
+-----			3	-++++			
----++	60	1	37	+++--	12		1
---+--	8	1	10	++---	10		
-+---+	5	3	14	+----	8	2	
+-----	192	8	214	-++++	19	2	
----+-				+++--	1		
---+--				++---	1		
-+---+				+----			
+-----				-++++			
----++	28	1	21	+++--	9	2	1
---+--	2	3		++---	5		1
-+---+	34	4	46	+----	5		1
+-----				-++++	3		
----+-	4	1	1	+++--	6		
---+--	208	276	139	+----	32	181	14
-+---+				-++++			
+-----				+++--			
----++				++---			
---+--	2	1		+----	11		
-+---+	22		32	-++++	9		
+-----	57	253	53	+++--	12	140	26
----+-	4	14	5	++---	10	14	3
---+--	1			+----			
-+---+	27	175	24	-----	14	156	24
Totals	945	768	816		198	497	72