THE UNIVERSITY OF WISCONSIN
COLLEGE OF AGRICULTURE

Madison 6

DEPARTMENT OF GENETICS

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Dr. M. M. Doudoroff,
Dept. Bacteriology,
University of California,
Berkeloy 4, Balif.

Dear Mike-

You could more expeditiously have gotten suitable cultures from K-12 from van Niel, who did a comparable class experiment last summer, but I am glad to send herewith:

58-161 B-M- (biotin; methionine) and

W-1777 T-L-$B_1$-; Lac- Mal- Xyl- Mtl- (lactose; maltose; d-xylose; mannitol); $V_1^r$ and $S^r$.

As unselected markers I would use Lac +/- on EMB, and $S^{r/s}$. The latter can be carried out most conveniently by brushing a loopful of streptomycin solution, about 20,000 units/ml, across andEMB plate. After this has dried, ~~you~~ can cross-streak the purified prototrophs. The zone of inhibition of $S^s$ can be as wide as 2 cm, so allow plenty of room. You can illustrate linkage very well and very easily by also scoring for Mal. As you found yourself, Mal and S are very closely linked.

Adequate directions are given in my 1947 Genetics paper. Inocula can be taken directly from overnight, unshaken, cultures grown at 37. I find it/ now more convenient to concentrate the washed culture from 10 to about 3 ml, and to spread .05 ml of the mixture on the surface of minimal agar. The plates can be incubated at 37, and EMB plates, of course, must be.

The results of such a cross should be about 70% Lac-; 30% +;; 90% Mal-; 10% +;; (with very little correlation, negative or positive). There are only a few percent crossovers between Mal and S. Will you let me know how it turns out?

By the way, I find that I've completely run out of reprints of the coli-amylomaltase paper. If you happen to be able to spare them, I would appreciate any number up to a maximum of 40 or 50.

Sincerely,

Joshua Lederberg