



DEPARTMENT OF MOLECULAR AND CELL BIOLOGY  
DIVISION OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

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Dear Josh:

What a memory you possess!

I was surprised to have a note from you, but the occasion seems to have some merit. The choice of an "antibiotic- $\beta$ -D-galactopyranoside" to be synthesized would be important, however:

1. It should not be too difficult to make.
2. There should be some intuitive sense that the galactoside would be much less toxic than the free antibiotic.

Hygromycin B -- This compound has 8 hydroxyl groups and 3 amino groups that could react, so it would take some effort to block all but one of the hydroxyls and all 3 amino groups in a way that they could be easily unblocked, and leave just one hydroxyl for reaction. Secondly, since hygromycin B is structurally similar to a trisaccharide, there is a good chance that the galactoside would still have considerable toxicity.

Chloramphenicol -- This is a better possibility, to my mind, because it has only two free hydroxyl groups to worry about. Moreover, the galactoside would be expected to differ greatly from the free antibiotic in its properties and might show little, if any, toxicity.

Thinking along these lines, why don't you send me a list of other possible antibiotics to consider. Its possible that I will be able to come up with a useful tool for your work.

With best regards,

Sincerely,

Clinton E. Ballou

DT  
KZ  
MN