

Sensitivity to methyl-methane sulfonate (MMS) in *Neurospora*

E. Käfer
McGill University

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Abstract

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Käfer, E. Sensitivity to methyl-methane sulfonate (MMS) in *Neurospora*

In an attempt to characterize and distinguish various repair deficient mutants of *Neurospora* several methods for testing sensitivity to MMS have been tried. Spot (auxanographic) tests work well but are laborious and no more reliable than transfer of conidia onto sorbose-containing agar media in petri plates. Using the latter method wild type strains show almost normal growth on concentrations up to 0.01% (vol/vol) MMS, but fail to grow on 0.05% MMS, and show reduced growth on intermediate concentrations. Several UV-sensitive mutants show reduced growth at 0.001% and practically no growth at 0.01% (see Table below). For routine tests of macroconidial strains, MMS (0.01 and 0.03%), is added to melted (50° or 60° C) minimal medium (Vogel's medium N) that contains 1.25% agar, 1.5% Sorbose and 0.05% each of fructose and glucose. Plates are poured, and usually inoculated within 2 hours (plates stored one day in the cold are still usable). The results show some variation from batch to batch but the differences between strains are generally consistent.

Growth of wild type and *uvr* mutants on various concentrations of MMS

-- : 0 mm + : 2-4 mm ++: 5-7 mm +++ : 7-10 mm
 ± : 1-2 mm ±, ++ or +++ indicates same size, but thin or irregular

Strain	Days of incubation*	MMS concentrations (% vol/vol)					
		0	0.005	0.01	0.03	0.04	0.05
Wild type	3	++	++	±		-	-
	4	+++	+++	+++	±	±	-
<i>upr-1</i> [*]	3	+		±			
	4	+++		+++	+++		
<i>uvr-2</i>	3	+	-	-	-		
	4	++	±	-	-		
<i>uvr-3</i>	3	±	-	-	-		
	4	+++	±	-	-		
	3	++	-	-	-		
	4	+++	±	-	-		
<i>nuh-4(16)</i> [†]	2	++	-	-	-		
	4	+++	±	-	-		

* Tested at 34° C except for *upr-1* (*cot-1*) which was tested at 25° C.

† Recently UV-induced nuclease halo mutant that maps close to *uvr-3* (Käfer and Fraser, submitted to *Molec. Gen. Genet.*).