



Weak mutagens in the Ames II / Ames MPF assay

Reducing the number of bacteria and amount of test compound in an assay like the Ames MPF should not compromise the sensitivity of the assay, and weak mutagens should still be detectable.

We have compared three typical "weak" mutagens in the Ames plate incorporation assay (from the NTP database) and in the Ames liquid microplate format. The detailed results can be seen on our homepage

Pyrene: the clearest mutagenic response is seen with TA1537. In the plate assay the fold induction over all concentrations tested is only slightly above 2. In the MPF assay a dose-dependent increase up to an 8-fold induction can be seen.

Formaldehyde: a weak mutagen for TA100 shows fold inductions rarely reaching 2 in the plate assay. In the MPF assay we have observed a fold induction over 5.

Danthron: weakly positive with TA100 and TA1537. In TA100 a very weak dose-dependent fold induction <2x can be seen with both assay formats. In TA1537 both assay formats show clear fold inductions without S9 (about 5x) and with S9 (8-13x in the plate format and 5-8x in the MPF format).

The examples demonstrate that the smaller format and reduced number of bacteria in the Ames II / Ames MPF liquid microplate format does not interfere with this assay's ability to detect weak mutagens.