

Standard OECD Ames Test vs. Enhanced Ames Test EAT Protocol

Condition	Standard OECD Ames Test	Enhanced Ames Test
Tester Strains	<p><i>S. typhimurium</i></p> <p>TA98</p> <p>TA100</p> <p>TA1535</p> <p>TA1537 or TA97 or TA97a</p> <p><i>E. coli</i></p> <p>WP2 <i>uvrA</i> or WP2 <i>uvrA</i> (pKM101)</p> <p>or</p> <p><i>S. typhimurium</i> TA102</p>	<p><i>S. typhimurium</i></p> <p>TA98</p> <p>TA100</p> <p>TA1535</p> <p>TA1537</p> <p><i>E. coli</i></p> <p>WP2 <i>uvrA</i> (pKM101)</p>
Protocol	<p>Preincubation (20 minutes incubation)</p> <p>or</p> <p>Plate incorporation</p>	Preincubation (30 minutes incubation)
Metabolic Activation	5-30% S9 prepared from the livers of rodents treated with enzyme-inducing agents such as Aroclor 1254 or a combination of phenobarbital and β -naphthoflavone, and in the absence of S9.	30% rat liver S9, 30% hamster liver S9, as well as in the absence of S9. S9 should be prepared from rodents treated with inducers of cytochrome P450 enzymes (e.g., a combination of phenobarbital and β -naphthoflavone).
Solvent/Negative Control	Water/Organic Solvent	Water/Organic Solvent (the lowest possible volume should be included in the pre-incubation mixture with justification to indicate that the volume of solvent does not interfere with metabolic activation of the <i>N</i> -nitrosamine).
Positive Control	Concurrent Strain-Specific Positive Controls	In addition to Concurrent Strain-Specific Positive Controls, two <i>N</i> -nitrosamines that are known to be mutagenic in the presence of S9 should be included, the choice of which should be justified based on the anticipated metabolism of the <i>N</i> -nitrosamine and cytochrome P450 enzyme most likely involved.