

Table 4: In vitro Studies

Test Model	Test Substance	Dose	Results	Ref
Ames Test, TA98 Salmonella Strain	Symphytine	?	no mutagenesis	[82] Symposium report, no dose information of statistical significance given in the report.
	Symphytine w/ S-9 microsome mix	?	no mutagenesis	
Ames Test, TA100 Salmonella Strain	Symphytine	?	no mutagenesis	
	Symphytine w/ S-9 microsome mix	?	mutagenic	
Lung Fibroblast (Chinese Hamster V79 cell line)	Symphytine	?	mutagenic	
Cyropreserved hamster embryonic cells.	Symphytine	?	no mutagenesis	
Drosophila	Echimidine	?	mutagenic	[20]
Ames Test: TA100, TA92, TA1535, TA1537, TA98, and <i>hisG46</i> Salmonella Strains	Lycopsamine +/- S-9 microsome mix	0.2 - 2mg/plate	no mutagenesis	[78]
Ames Test, TA98 Salmonella Strain	Extract: <i>S. sp.</i> leaf in acetone	0.2 to 1.4g/ml	toxic (or anti-mutagenic?)	[83]
	As above with S-9 microsome mix	0.2 to 1.4g/ml	no mutagenesis	
Ames Test, TA100 Salmonella Strain	Extract: <i>S. sp.</i> leaf in acetone	0.2 to 1.4g/ml	no mutagenesis	
	As above w/ S-9 microsome mix	0.2 to 1.4g/ml	no mutagenesis	
Human lymphocytes	Symphytum alkaloid mix	1.4 & 14? g/ml	no mutagenesis	[84]
		140 & 1400? g/ml	sister chromatid exchanges and chromosome aberrations	
Human Chang liver cells	Symphytine/symlandine	67? g/ml	no mutagenesis to p53 gene	[64]
	Symphytum Extract	67? g/ml	mutagenesis to p53 gene	
Meristematic cells of the lateral roots of <i>Vicia faba</i>	Alkaloid fraction I containing lasiocarpine	See ref.	antimitotic and mutagenic	[73]
	Alkaloid fraction II	See ref.	no mutagenesis	
	Alkaloid fraction III	See ref.	antimitotic	
	Aqueous infusion of <i>S. officinale</i> root	1/8 and 1/16 dilutions	antimitotic and mutagenic	