

Prune extract

Botanical Source Prunus domestica

Synonyms

IUPAC Name

CAS Reference 90082-87-4

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
371	Listed by the Council of Europe as acceptable for use in food.

US Food and Drug Administration	
Number	Comment
-	-

Joint FAO/WHO Expert Committee on Food Additives (JECFA)		
Number	ADI	Comment
-	-	-

FEMA	
FEMA No.	Comment
-	-

Natural Occurrence and Use in Food
Found in prunes

Estimated Intake from Food and Drink	
Daily Intake mg/kg/day	FEMA Possible Average Daily Intake mg
-	-

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Tobacco Product Related Chemical and Biological Studies for Ingredients Added in a Mixture

Smoke Chemistry		
Published Source	Level Tested %	Comment
BAT	1.74000	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.

Ames Activity		
Published Source	Level Tested %	Comment
BAT	1.74000	Within the sensitivity and specificity of the system the Ames activity of the cigarette smoke condensate was not increased by the addition of the ingredient.

Micronucleus		
Published Source	Level Tested %	Comment
BAT	1.74000	Within the sensitivity of the in vitro micronucleus assay the activity of the cigarette smoke condensate was not increased by the addition of the ingredient.

Neutral Red		
Published Source	Level Tested %	Comment
BAT	1.74000	Within the sensitivity of the test system the in vitro cytotoxicity of the cigarette smoke condensate was not increased by the addition of the ingredient.

Inhalation		
Published Source	Level Tested %	Comment
BAT	1.74000	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.

Mouse Skin Painting		
Published Source	Level Tested %	Comment

References

Baker RR, Pereira da Silva JR, Smith G. The effect of tobacco ingredients on smoke chemistry. Part I: Flavourings and additives. Food Chem Toxicol. 2004; 42 Suppl:S3-37.

Baker RR, Pereira da Silva JR, Smith G. The effect of tobacco ingredients on smoke chemistry. Part II: casing ingredients. Food Chem Toxicol. 2004; 42 Suppl:S39-52.

Baker RR, Massey ED, Smith G. An overview of the effects of tobacco ingredients on smoke chemistry and toxicity. Food Chem Toxicol. 2004; 42 Suppl:S53-83.

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Tobacco Product Related Chemical and Biological Studies for Ingredients Tested Singly

References
Baker RR, Bishop LJ. The pyrolysis of non-volatile tobacco ingredients using a system that simulates cigarette combustion conditions. J. Anal. Appl. Pyrolysis 2005, 74, 145-170.

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Toxicological Data on the Unburnt Ingredient

[+ve, positive; -ve, negative; ?, equivocal; with, with metabolic activation; without, without metabolic activation]

In vivo

No relevant data identified

In vitro

<u>Test system</u>	<u>Test conditions</u>	<u>Endpoint</u>	<u>Activation</u>	<u>Result</u>	<u>References</u>
Hamster ovary cells	Dried California prunes were homogenized with water, cells exposed to supernatant or resuspended lyophilized material (90 mg/ml) for 3 hr, cells examined 20 hr later for chromosome aberrations	Chromosome damage	With and without S9	+ve (rather less potent when S9 was present)	Stich <i>et al</i> 1981
Hamster lung fibroblasts, genetically engineered to express rat CYP1A2 enzyme and sulfotransferase activities	Raw plum juice tested at 0-0.1 ml/test (0-2%) in the comet assay for ability to protect against DNA damage induced by known genotoxins (AAF and PhIP). Good quality study	Inhibition of DNA damage	Not relevant	Plum juice showed a moderate ability to reduce DNA damage [protective effect]	Edenharder <i>et al</i> 2002

<i>Salmonella typhimurium</i> TA98 and TA100	Antimutagenic potential of a plum extract (15 ug/plate) was tested, little detail given – possibly an acetone extract	Antimutagenicity	With S9	Tested material reduced the activity of standard mutagens in both strains [protective effect]	Luo <i>et al</i> 1991
<i>Salmonella typhimurium</i> TA98 and TA100	Antimutagenic activity of raw and heated plum juice tested against known mutagens (IQ and MeIQ)	Antimutagenicity	With S9	Extracts reduced potency of the known mutagens [protective effect]	Edenharder <i>et al</i> 1994
<i>Salmonella typhimurium</i> TA98	Plums squeezed, washed several times with water and juice concentrate tested. Solid residue was extracted sequentially with various organic solvents to yield extracts that were each tested, at up to about 0.1 mg/plate. Also, antimutagenic effect was tested against IQ and MeIQx	Mutation Antimutagenicity	With and without S9 With and without S9	-ve limited study, low doses tested in only one strain Extracts reduced potency of the known mutagens [protective effect]	Edenharder <i>et al</i> 1995

Lipid peroxide-induced hydroxylation of deoxyguanosine	Methanol extract of prunes	DNA oxidation	Not applicable	The extract reduced 8-OH-dG formation [protective effect]	Kasai <i>et al</i> 2000
<i>Salmonella typhimurium</i> TA98 and TA100	Plums and prunes were homogenized in water, water soluble fractions were concentrated, residues extracted with chloroform, n-butanol and water, and chloroform fractions was fractionated into methanol and hexane-soluble fractions. 5 fractions tested for plums and 5 for prunes.	Mutation	With and without S9	-ve limited study, only tested in two strains	Stoltz <i>et al</i> 1982 & 1984
<i>Salmonella typhimurium</i> TA1530, TA1531, TA1532 and TA1964	An unpurified extract of plum peel (derivation was not described) was tested at 5 ul/plate	Mutation	Without	-ve [very limited study]	Baker <i>et al</i> 1974
<i>Salmonella typhimurium</i> TA100	Juice of salted plum tested at 0.1 ml/plate for ability to reduce potency of a known mutagenicity	Antimutagenicity	Without	Some reduction in potency [protective effect]	Kimm & Park, 1982

References

Baker C H *et al* (1974). Cherry plum pigment as a natural red food colorant: sensory evaluation and mutagenicity testing. *Food Product Development*, 8, 65-70.

Edenharder R *et al* (1994). *Food and Chemical Toxicology*, 32, 443-459.

Edenharder R *et al* (1995). *Mutation Research*, 341, 303-318.

Edenharder R *et al* (2002). *Mutation Research*, 521, 57-72.

Kasai H *et al* (2000). Action of chlorogenic acid in vegetables and fruits as an inhibitor of 8-hydroxyguanosine (8-OH-dG) formation. *Food and Chemical Toxicology*, 38, 467-471.

Kimm S W & Park S C (1982). Evidence for the existence of antimutagenic factors in edible plants. *Korean Journal of Biochemistry*, 14, 47-59.

Luo H *et al* (1991). A preliminary study on the antimutagenic properties of vegetables and fruits. *Chinese Medical Sciences Journal*, 6, 113-118.

Stich H F *et al* (1981). Clastogenic activity of dried fruits. *Cancer Letters*, 12, 1-8.

Stoltz D R *et al* (1982). The health significance of mutagens in food. Chapter 15, *Carcinogens and mutagens in the environment*, Vol. 1, pp185-197.

Stoltz D R *et al* (1984). Mutagenicity screening of foods. 2. Results with fruits and vegetables. *Environmental Mutagenesis*, 6, 343-354.