

The sedative and antinociceptive effects of dill (*Anethum graveolens* L.) used in folk medicine

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The dill (*Anethum graveolens* L., Umbelliferae; Apiaceae) is a spice (FRENCH, 1971; FRIEDBERG, 1978) used in different purposes in the folk medicine of Romania (BUTURA, 1979).

Table 2
The Effect of the Volatile Oil (Fruit) on the Spontaneous Motility of Mice (*i.p.*)

a. Aqueous extracts of dill, the volatile oil and carvone were tested on the motility of mice (RÁCZ-KOTILLA, ROTARU, RÁCZ and ALMASAN, 1988). The preparations were administered intraperitoneally (*i.p.*) to preselected male albino mice weighing 20 ± 3 g (see Table 1).

Table 1
The Effect of Dill on the Spontaneous Motility of Mice (*i.p.*)

Part used	Dose g/kg b.w.	Motility (%) after		
		1 hour	2 hours	3 hours
5	10	112	120	116
10	10	108	114	120
25	10	92	88	80
50	10	88	69	64
Control	100	100	102	98

	1 hour	2hours	3hours
5	112	120	116
10	108	114	120
25	92	88	80
50	88	69	64
Control (saline + 4% Tween 80)	100	102	98

Note: b.w. = body weigh. The standard deviation calculated for 10 animals is $\pm 8\%$

b. The volatile oil obtained from the fruit of dill was given as a

cent to 64 per cent (in the third hour). Similar values were obtained with the main component of the volatile oil (carvone).
c. Carvone was administered alone or in combination with the volatile oil (see Table 3).

Adding 10 mg volatile oil (50% carvone) to 10 mg carvone, the values are the same as using 15 mg pure carvone.

d. The effect of some preparations was observed in hypermotility provoked by a central nervous system exciting drug, Methylphenidat (INN), 20 mg per 1 kg body weight, subcutaneously (*s.c.*)

Table 4

The Effect of the Aqueous Extracts of the Fruit on the Hypermotility of Mice

Preparation and dose		Motility (%)		
Methyl-phenidat mg/kg b.w. (<i>s.c.</i>)	Fruit (aqueous extract) g/kg b.w. (<i>i.p.</i>)	1 hour	2 hours	3 hours
20	1	96	93	93
20	2	91	83	81
20	3	87	80	79
20	0	121	125	125
Control (saline 20 ml/kg b.w.)	101	104	97	

Table 5

The Effect of the Volatile Oil of the Fruit on the Hypermotility of Mice

Preparation and dose		Motility (%)		
Methyl-phenidat mg/kg b.w. (<i>s.c.</i>)	Volatile oil of the fruit mg/kg b.w. (<i>i.p.</i>)	1 hour	2 hours	3 hours
20	25	110	102	107
20	50	98	94	90
20	100	90	82	78
20	0	120	128	122
Control (saline, 20 ml/kg b.w.)		101	99	98

The hypermotility of mice ($\pm 125\%$ as compared to the spontaneous motility) provoked by Methylphenidat administered subcutaneously could be abolished administering aqueous extracts of the fruit (see Table 4) or the volatile oil of the same source (see Table 5).

The results are calculated as average percentage of 10 preselected animals; the standard deviation of the method is $\pm 8\%$. A number of 300 mice was used.

Table 6

The Antinociceptive Effect Using The Hot Plate Method

Preparation mg/kg b.w.	Dose %	Antinociceptive	effect
Stem (aq. extr.)	500	20	± 2.0
Leaf (aq. extr.)	500	16	± 1.2
Fruit (aq. extr.)	500	34	± 3.2
Fruit (aq. extr.)	1000	65	± 7.8
Volatile oil (fruit)	5	28	± 2.4
Volatile oil (fruit)	10	38	± 4.6
Volatile oil (fruit)	25	44	± 3.2
Acetylsalicylic acid	200	61	± 6.8
Control (saline)		8	± 0.7

Note: SD = standard deviation (10 animals)

Table 7

The Antinociceptive Effect Using The Writhing Test Method

Preparation	Dose mg/kg b.w. (<i>s.c.</i>)	antinociceptive %	effect SD
Stem (aq. extr.)	500	22	± 2.4
Leaf (aq. extr.)	500	19	± 1.9
Fruit (aq. extr.)	500	49	± 3.4
Fruit (aq. extr.)	1000	87	± 6.3
Volatile oil (fruit)	5	32	± 3.0
Volatile oil (fruit)	10	46	± 4.8
Volatileoil (fruit)	25	68	± 6.2
Acetylsalicylic acid	200	79	± 6.4
Control (saline)		6	± 0.5

Note: SD = standard deviation (10 animals)

2. ANTINOCICEPTIVE EFFECT

Aqueous extracts (10%) of the fruit and the volatile oil (0.5% in aqueous solution after adding Tween 80) were used, subcutaneously (*s.c.*). The hot plate method (see Table 6) and the writhing test using 0.7% acetic acid (*i.p.*) were applied in the mouse (see Table 7).

