

ARGENTINE SOCIETY OF BIOLOGY

(Sociedad Argentina de Biología)

Abstracts from the

Eleventh Multidisciplinary Workshop

(Décimo primera Jornada Multidisciplinaria)

December, 2009

BuenosAires, Argentina

The abstracts were evaluated by a scientific committee prior to publication

73. ANTIGENOTOXIC EFFECTS OF THREE SPECIES OF GRIFOLA GENUS

Postemsky P¹, Palermo AM², Curvetto N¹.

¹CERZOS-CTT-BB- CONICET, UNSur, Bahía Blanca. ²CITEFA, Buenos Aires, Argentina. E-mail: apalermo@citefa.gov.ar

G. gargal, *G. frondosa* and *G. sordulenta* are native edible polypore mushrooms of Argentina with attributed antioxidant properties. They were evaluated for their potential antigenotoxic effects using the eye-SMART assay in *D. melanogaster* and 7-12-dimethylbenz(α)anthracene (DMBA; 25 μmol/ vial) as promutagen/procarcinogen.

Heterozygote larvae (*white/white*⁺) were grown in media with colonized wheat flour (cWF) and the DMBA solution. Wheat flour, the solvent or water were used as negative controls. The induction of a mutational or recombinational event in the eye larval imaginal discs is expressed as a white spot in the red eye of adults since it causes loss of heterozygosity. The addition to the culture media of cWF with any of the three species increased survival of larvae. Spots per 100 eyes in controls were: 21 (water), 27 (solvent), 20 (wheat flour), 88 (DMBA), 79 (wheat flour+DMBA). In all combined treatments (DMBA plus *G. gargal*, *G. frondosa* or *G. sordulenta* cWF) the frequency of spots/100 eyes decreased in 30%, 25% and 20% respectively ($p < 0.05$, χ^2 test). The corresponding values were 57 (*G. gargal*), 62 (*G. frondosa*) and 65 (*G. sordulenta*) spots/100 eyes. Conclusions: all three mushroom colonized wheat flours were non toxic, antigenotoxic and increased survival of treated larvae. b) these protective effects could be attributed to their content in antioxidants, phenolic compounds, and/or polysaccharides.

74. GABA_A RECEPTOR ACTIVITY OF OXYGEN-BRIDGED NEUROSTEROID ANALOGS

Rey M¹, Eduardo SL², Alvarez LD², Coirini H^{1,3}.

¹Lab. Neurobiología IBYME-CONICET, ²Dept. Química. Orgánica. UMYNFOR-FCEN-UBA; ³Dept. Bioquímica Humana-FMED-UBA. E-mail: rey@dna.uba.ar

Progesterone's metabolites like allopregnanolone (Allo) and its 5β isomer (Preg), are produced in the nervous system and modulated the activity of the GABA_A receptor. The rapid biotransformation of these steroids could be a disadvantage for therapeutic treatments. The development of synthetic analogs more stables with comparable or better activity may resolve this problem. The aim of this work was to elucidate the interaction of steroids having similar spatial conformation like Allo (SB1: 1-19 oxo; SB2: 4-19 oxo) or Preg (Ns6: 1-11 oxo Δ4) with the GABA_A receptor. ³H-muscimol (MUS 10nM) and ³H-flunitrazepam (FLU 1nM) binding pattern were determined in cortex and cerebellum rat's synaptosomes. Incubations were made at 4°C by 60-90 min with a range of 25 to 1000 nM of Allo, Preg, SB1, SB2 or Ns6. GABA (10 μM) or Diazepam (1 μM) were used for the non specific binding respectively. Allo, Ns6 and Preg stimulate the binding of both ligands (EC50 MUS= 22; 44; 118 nM ; FLU= 180;125;104 nM) meanwhile the others two steroids only stimulate FLU (EC50= SB1: 38nM SB2: 250nM) but not MUS binding. Further evaluations in live tissues or whole animals are necessary to validate these steroids as therapeutic drugs.

(UBACYT-M012 - PICT-727).

75. 3α-HYDROXY-6-19-OXIDOPREGN-4-ENE-20-ONE (Ns1) EFFECTS ON ASTROGLIOSIS INDUCED BY HYPOXIA IN ORGANOTYPIC CULTURES OF CEREBRAL CORTEX

Rey M¹, Kruse MS¹, Veleiro A², Burton G², Coirini H^{1,3}.

¹Lab. Neurobiología IBYME-CONICET, ²Dept Química. Orgánica. UMYNFOR-FCEN-UBA; ³Dept. Bioq.Humana-FMED-UBA. E-mail: rey@dna.uba.ar

Some progesterone's metabolites produced in the nervous system are able to modulate the action of neurotransmitters on ion channels. One of these steroids Allopregnanolone (Allo) has showed a neuroprotective effect on organotypic cultures from cerebral cortex submitted to hypoxia. On the other hand preliminary studies have indicated that the synthetic steroid 6-19 oxo-pregnene (Ns1) shows a similar binding pattern to GABA_A receptor like Allo. The aim of this study was to evaluate the possible protective action of Ns1 in an 'in vitro' tissue culture system by determining the astroglial reaction (GFAP) during hypoxia. Tissue cultures were treated with similar concentration of Allo or Ns1 (5x10⁻⁶M) or vehicle, 24h before and during hypoxia (1h). Then steroids were removed and 24 hours later, tissues were homogenized to determine the expression of GFAP by Western blot. Cultures subjected to hypoxia without steroid treatment showed a significant increase in the expression of GFAP (27% $p < 0.05$). Pretreatment with Allo or Ns1 prevented this effect. Therefore Ns1 that shows like Allo similar ability to prevent astrogliosis induced by hypoxia is a possible candidate for future therapeutic applications.

(UBACYT M012 and PICT727).

76. ANTIVIRAL ACTIVITY EVALUATION OF *Baccharis crispa* Sreng

Rivarola ME, Boris AS, Chavez MG, Konigheim B, Aguilar JJ, Contigiani M.

Instituto de Virología, Facultad Cs. Médicas, UNC. Cba., Argentina.

Baccharis crispa (carqueja) native specie of Cordoba, is used in infusions, for its antiseptic, antirheumatic, colagoga, diuretic and hepatic properties. Our aim was to evaluate the antiviral activity of 5 extracts of *B. crispa*: n-hexane (H), chloroform (Cl) methanol (M), cold and hot water extracts (AF and AC), on Simplex Herpes Type I (HSV-I), Venezuelan Equine Encephalitis (VEEV) and Saint Louis Encephalitis virus (SLEV). *In vitro cytotoxicity*: Several concentrations of the extracts were added in MEM and incubated in VERO cells. The cell viability was observed at 48 hs by neutral red assay (NR). *Evaluation of antiviral activity*: Subtoxic concentrations of extracts were inoculated on cell infected cultures and incubated at 37 °C for 3 days for VEEV, HSV-I and 7 days for SLEV. Viruses, cell culture and different concentrations used from each extract were included as controls. The viral inhibition (%I) (estimated by RN assay) were: for Cl on VEEV (50-70%I) and on HSV-I (50-100%I); AC on HSV-I (50-60%I); AF disabled VEEV (40%I) and to HSV-I (50%I). H and M did not shown considerable antiviral activity. These results allow us to conclude that AC, AF and Cl inhibit VEEV and HSV-I. None analyzed extract inhibited SLEV. Further studies will be carried out in order to get a better understanding regarding antiviral properties of *B. crispa*.

A					
Abal A	10	Cilla G	77	Góngora A	43
Acosta JM	59	Cohen DJ	26, 30	Gonzalez Deniselle MC	38, 52
Aguilar JJ	76	Coirini H	15, 52, 53, 74, 75	González NV	44
Allende ML	C2	Coll TA	34	Gonzalez-Echeverría MF	27
Almirón W	9	Coluccio Leskow F	7, 41, 42	Graña Grilli M	45
Alonso AM	1	Contigiani M	9, 76	Grassi E	56, 87
Alvarez LD	75	Córdoba M	20, 31	Grillo C	21
Alvarez-Sedó C	27	Coso O	7	Guajardo M	46
Alzola P	2	Cresto JC	17, 24	Gutierrez A	47
Alzola R	3, 2	Crivello M	25	Gutnisky C	48
Apichela SA	C4, 86	Croce MV	33		
Arany E	11	Croci DO	81	H	
Archuby DI	4, 23	Cruzans PR	18	Hattori RS	32
Argañaraz ME	86	Cuasnicu PS	26, 30, 57, 81, 83	Helbling WE	C1
Arndt-Jovin D	41, 42	Curia A	26	Hernando Insúa A	11
Arzondo MM	5	Curvetto N	73		
Asaro A	6			I	
		D		Insera P	28, 36, 55
B		D'Andrea MF	19	Iñiguez MA	8
Baldi A	43	Dalvit GC	48, 54	Irusta G	79
Barañaño R	63	De Nicola AF	38, 52	Ithurrart L	49
Barbeito CG	85	Degese MS	7		
Barbeito C	33	Del Pozo MR	27, 58	J	
Barcos L	7	del Valle JC	6, 67	Jarazo J	37
Barni María V	8	Di Matteo AM	40	Jares Erijman EA	7, 41, 42
Batallán G	9	Diaz M	39	Jensen F	36
Batista S	10	Dorfman V	28	Jovin T	41, 42
Battistone MA	83	Doumecq ML	85	Julianelli V	50
Beconi MT	54, 78	Douthat B	9		
Bergada I	24	Durso G	10	K	
Bettler B	25	Durst M	11	Karlani F	37
Bianchi MS	11			Konigheim B	9, 76
Bilotas M	63	E		Kraemer MN	51
Blaquier JA	57	Echevarría H	85	Kruse MS	52, 53, 74
Blasco M	12	Eduardo SL	75		
Bonaventura MM	25	Elisio M	29	L	
Boris AS	76	Ernesto JI	30, 83	Lacunza E	33
Bourguignon N	13			Laguna GI	54
Bravo G	43	F		Lapyckyj L	58
Bravo Almonacid R	S3	Faivovich J	S6	Larramendy ML	44, 60, 71, 82
Breining E	78	Felipe A	3	Larrea F	57
Brizuela ER	14	Ferman L	45	Larsen M	3
Bruno MA	15	Fernandez I	24	Leopardo N	36, 55, 62, 84
Buosi P	64, 65, 66	Fernández M	13	Levin L	56, 87
Burton G	53, 74	Fernández RA	C5	Levy G	43
Busso C	49	Fernández S	31	Libertun C	11, 13, 22, 25
Busso D	26, 57	Fernandino JI	12, 29, 32	Llompár G	10
		Ferretti V	33	Lobo G	C7
C		Flores S	9	Loidl F	28
Cabral A	16	Flumian C	43	Lombardo DM	18, 40
Calb D	30	Fontana V	34	López Bergami P	C6
Calvo JC	34, 50	Forchiassin F	56, 87	López Mañanes AA	6, 67, 72
Calvo L	50	Fossati M	70	Lucca CJ	14
Camberos MC	17, 24	Franco MJ	35	Lux-Lantos V	11, 13, 22, 25
Cánepa M	70	Fraunhoffer N	28, 36, 62, 84		
Canosa LF	1, 51	Fretchel G	24	M	
Cao G	17	Freyselinard A	55	Maldera JA	57
Carou MC	18	Fumuso E	3	Marín-Briggiler CI	5, 27, 58
Carriquiriborde P	69			Marques L	16
Casalía ML	19	G		Marquinez A	20
Casas E	20	Gabrielli M	59	Marro CT	80
Castrogiovanni D	21, 68	Gambini A	37	Martinez C	10
Cataldi N	22	Garay L	38, 52	Martinez ML	14
Catena M	85	Gargiulo Monachelli G	38, 52	Martinez P	14
Cebal E	34	Gauna Añasco L	39, 40	Martini CN	59
Cética P	5, 48, 54	Gazzaneo P	40	Martucci LC	17
Chavez MG	76	Gimeno EJ	85	Matsuda M	32
Chiale MC	4, 23	Giudice J	41, 42	Mazzetti MB	19
Chirinos M	57	Goldbaum F	S1	Meresman G	63
		Gómez M	43	Meyer M	38, 52

Miceli DC	86	Poskus E	24	Suescun MO	16
Miragaya MH	S2	Postemsky P	73	Szlagó M	24
Miranda LA	29				
Mladovan A	43	R		T	
Molina VA	C3	Rabinovich GA	81	Tanevitch A	10
Molinari G	60	Raffo FG	57	Tellechea M	24
Montalti D	4, 23, 45	Rahn MI	35	Terrasa A	46
Montaner A	S7, 11	Raschia A	16	Tesone M	79
Monteavaro CE	85	Rawe V	27	Tonietti M	24
Montenegro O	49	Reboredo G	47	Tonn C	9
Morán G	64, 65, 66	Reigosa MA	21, 60, 68, 71	Torres Y	49
Moreno R	26	Revilla M	18	Trabucchi A	24
Moreno S	8	Rey M	53, 74, 75	Trifone L	24
Moro L	61	Ricci A	63	Trudeau VL	32
Mouso N	56, 87	Rivarola ME	76		
Muscarsel ML	62, 84	Rivolta M	31	V	
		Rolón G	77	Valdez S	24
N		Romanato M	50	Varas M	14
Nagahama Y	32	Romero S	86	Vasen G	81
Natale G	82	Ronco A	82	Vazquez-Levin MH	5, 27, 58
				Vega JA	40
O		S		Veleiro A	53, 74
Oliva G	39	Salama F	5	Vera Candiotti J	82
Olivares C	63	Salamone D	37, 61	Vichera G	61
Olivera R	37, 61	Salatino M	S5	Vila MC	59
Otegui GHRA	64, 65, 66	San Martín de Viale LC	19	Vissio P	70
		Satorre M.M	78	Vitullo A	28, 36, 55, 62, 84
P		Scarcella S	2, 3	Vizziano D	12
Palacios A	46, 47	Schenone AB	24		
Palermo AM	73	Scotti L	79	W	
Panelo LC	67	Segal-Eiras A	33	Weigel Muñoz M	30, 83
Panzeri A	67	Segura ET	80	Willis M	55, 62, 84
Parborell F	79	Seigelchifer M	S4	Woudwyk MA	85
Parisi J	21, 68	Sestelo A	31		
Passicot GA	17, 24	Solana H	2, 3	X	
Paul-Prasanth B	32	Solari AJ	35	Xiong H	32
Pérez MR	69	Soloneski S	44, 60, 82		
Pérez Sirkin D	70	Somoza GM	1, 12, 29, 32, 69	Z	
Piergiacomini V	47	Soñez MC	40	Zampini R	86
Pilili JP	71	Soto P	85	Zeinsteger P	46, 47
Pinoni SA	72	Stella I	36	Znidar A	56, 87
Ponce D	49	Strüssmann CA	32		
Popesku J	32	Stumpo I	37		