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313 DECREASED NEUROLOGICAL SIDE EFFECTS WITH ARIPIPRAZOLE: A RESULT OF FUNCTIONALLY SELECTIVE ACTIVATION OF DOPAMINE D₂ RECEPTORS.

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High affinity D₂ dopamine receptor antagonism has long been implicated in the development of neurological side effects associated with the chronic administration of a number of antipsychotics. The recently marketed atypical antipsychotic aripiprazole demonstrates a very low incidence of these extrapyramidal side effects (EPS) despite the unusually high affinity the drug has for the D₂ receptor. We hypothesize that the low incidence of EPS caused by aripiprazole is due, in part, to its ability to activate certain functions linked to the D₂ receptor differentially, a mechanism known as functional selectivity or agonist trafficking. Our previous studies using two D₂-mediated functional endpoints (GIRK channel activation and GTPγS binding) showed aripiprazole to be an antagonist (Shapiro et al., 2003), although the compound was a partial agonist against adenylate cyclase (Lawler et al., 1999; Burris et al., 2002; Shapiro et al., 2003). The current study investigated the actions of aripiprazole at the D₂₁-mediated activation of MAP kinase. Using CHO cells stably transfected with the hD₂₁ receptor, we measured MAP kinase activation by means of an ELISA. Relative to the intrinsic activity of the D₂ full agonist quinpirole, aripiprazole was determined to be a partial agonist. The data from effects on D₂₁-mediated effects on adenylate cyclase and MAPK are being compared to D₂-mediated effects on phospholipase A₂ activation (i.e., [³H]arachidonic acid release) in the same stably transfected CHO cell line. Together, these studies will offer insight into the D₂₁-mediated molecular mechanisms of G protein functional selectivity, and their role in decreasing neurotoxic side effects of the atypical aripiprazole.

314 IS THERE A LINK BETWEEN FREE RADICAL FORMATION AND CELL DEATH.

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The purpose of this study is to discuss whether there is a correlation between free radical formation and cell death in cultured rat cerebellar granule cells. Free radical formation is assayed by the use of the fluorescent probe DCFH, and cell death is either monitored by trypan blue exclusion or by release of lactate dehydrogenase. Toxic compounds that are investigated are polychlorinated biphenyls, brominated flame retardants, perfluorinated compounds and hydrocarbon solvent. The results show that there is a correlation between free radical formation and cell death for PCB, although the higher PCB seems to be more toxic than expected from their DCFH-fluorescence. For brominated flame retardants tetrabromobisphenyl yields a high degree of DCFH-fluorescence and substantial cell death. The brominated diphenylethers are less active in DCFH-fluorescence, but active in killing cells. For the perfluorated compounds there is not a good correlation between cell death and DCFH-fluorescence. Aromatic and naphthenic hydrocarbons yield DCFH-fluorescence and cell death, whereas aliphatic hydrocarbons only produce free radicals.

315 COMPARISON OF RAT HIPPOCAMPAL GENE EXPRESSION UTILIZING LASER CAPTURE MICRODISSECTION (LCM), RNA AMPLIFICATION AND OLIGONUCLEOTIDE MICROARRAYS.

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The hippocampus has a crucial role in transferring short-term memory to long-term memory, with diminished function associated with aging. Previously, spatial learning and memory in water-reinforced complex maze and escape-reinforced Morris water maze tasks for three rat strains were assessed in our laboratory. Distinctive learning differences were observed across strains and within strain. To determine if memory and learning performance are correlated to differential gene expression, hippocampi from fast-learning (FL) and slow-learning (SL) Sprague-Dawley, Spontaneously Hypertensive and Wistar-Kyoto aged rats (15 months) were examined. Frozen brain sections were mounted on glass slides, and then stained and dehydrated. Cells from the CA regions of the hippocampus were collected using a PixCell Iie LCM system and total RNA was extracted. First round RNA amplification was performed using a RiboAmp OA RNA amplification kit. Briefly, from total RNA, double-stranded (ds) cDNA was synthesized prior to *in vitro* transcription to generate aRNA, which was used in second round amplification to generate additional ds cDNA. The ds cDNA was introduced into an Agilent low RNA input

fluorescent linear amplification kit to generate labeled antisense cRNA. The FL and SL RNA samples within strain were labeled using Cy3 and Cy5 dyes, and were hybridized to Agilent rat oligo microarrays. Microarray slides were scanned and the data analyzed using the Rosetta Resolver data analysis system. Data analysis suggests minimal gene expression differences within strain between FL and SL rats, with approximately one dozen genes of interest. These expression differences will be verified using real-time PCR and the hippocampal gene expression between these aged rats and younger counterparts are currently being examined. By further exploring these changes, the molecular mechanisms of age-related memory disorders, such as Alzheimer's disease, may be elucidated.

 **316** STUDENT ROUNDTABLE ON EFFECTIVE PRESENTATIONS.

A. Wang. *Biomedical Sciences and Pathobiology, Virginia Tech, Blacksburg, VA.*

The ability to present information to an audience in a clear, concise manner is a critical academic and career skill. An effective presentation conveys important knowledge, generally as a summarization of a larger body of data or ideas, often within a specified format or time frame, and provides a forum for a productive exchange of ideas. Typical formats include posters and oral presentations. These can be used in academic settings (e.g., an oral classroom presentation, a proposal defense, or a thesis/dissertation defense), at professional/scientific conferences (e.g., a poster presentation or a platform talk), or even in job interviews. This symposium will address some of the skills needed to deliver an effective presentation. Students will find the topics to be particularly useful and informative. The speakers will cover general concepts of communication, provide practical hints for organizing and conveying information in posters and oral presentations, and discuss the skills needed to effectively answer questions and comments from the audience.

 **317** PRESENTING AN EFFECTIVE POSTER.

S. C. Fitzpatrick. *Office of the Commissioner, USFDA, Rockville, MD.*

Presenting a poster is an exciting opportunity to showcase your research efforts to your scientific colleagues. However presenting an effective poster requires planning and thought. First, make sure your research is at a point where you have something valuable to present. Have you been able to draw scientifically valid conclusions from the work? Second, decide whether you really wish to present a poster or if you should be giving a platform presentation. Presenting a poster gives you the unique opportunity for one on one interaction with other scientists in your field. It enables you to get feedback and suggestions on your research. It may lead to collaborations with other scientists doing similar work. Third, decide who your audience will be and determine their level of understanding of the general field in which you work. Is this a specialty meeting where everyone is conversant in your field or is it more of a general science meeting? This will determine the level of background you must add to your poster to make it meaningful to those who read it. Think carefully about how you organize your poster. It must be attractive enough to draw readers to it in a room of many posters. The care and detail you put into putting together your poster is indicative of the overall care you put in doing your research. Make sure your print is big enough to read easily from about two feet away. Remember us senior scientists who may give you valuable feedback do not necessarily have the best eyesight anymore. Graphics that illustrate your research and are easily understood are one very positive and important element of good posters. Colors are more appealing than black and white. Think about what attracts you to a poster and incorporate some of these suggestions into your work. Finally relax and enjoy yourself. Speak up and show your excitement for your work. If your research is not interesting to you, it will not be to anyone else either. Ask questions of those who come to talk to you. This is an opportunity for you to get feedback to enhance your research- not simply a time to present your data.

 **318** PLATFORM PRESENTATIONS.

G. L. Kimmel. *Office of Research and Development, USEPA, Washington, DC.*
Sponsor: A. Wang.

A platform presentation provides the speaker with an opportunity to present information in an uninterrupted manner. It is important that the speaker prepare in a way that the audience will be able to understand to flow of thought, the conclusions drawn and the take home message. The current talk will focus on three considerations that are important to an effective platform presentation: the audience, the speaker, and the preparation. The audience is the group of people on the other side of the platform. Who are they? Academics, bureaucrats, lawyers, "the public?" They are there for a reason. What is it? Do they want to hear your latest research results? Do they expect an introduction to a series of talks that will follow? Or do they