**Company contact:** Maria Maccecchini, CEO
QR Pharma, Inc.
484 253 2296
Maccecchini@qrpharma.com

# QR Pharma Awarded SBIR Grant by NIA/NIH to Test Posiphen® and Metabolites in Various Models

*September 21, 2010* QR Pharma, Inc. (QR), Radnor, PA: QR a clinical-stage specialty pharmaceutical company committed to developing therapeutics with novel approaches for the treatment of cognitive impairment and Alzheimer's disease and the Medical University of South Carolina (MUSC) announced today that they received a Small Business Innovation Research (SBIR) phase I grant in the amount of $220,000 to study Posiphen? and its metabolites in cell culture and in transgenic Alzheimer mice.

Posiphen® a small orally active compound, has been shown in cell cultures and in normal mice, AD transgenic mice and Down syndrome (DS) mice as well as in humans to reduce the synthesis of amyloid-β precursor protein (APP), which is cleaved into a number of toxic peptides. These peptides include N- and C-terminal fragments and amyloid-beta 42 (Aβ42) that is widely believed to be responsible for Alzheimer disease pathogenesis.

APP is cleaved into a number of toxic peptides, one of them being amyloid-β42 (Aβ42), the others being cleaved from the N- and C- terminal ends. These peptides attack multiple pathways of neuronal cell life leading to synaptic loss and nerve cell death. This induces dysfunction, neuroinflammation, and leads to cognitive impairment and neurodegeneration.

Posiphen® was found to be metabolized into three major metabolites. The primary activity is APP inhibition; it is exhibited by Posiphen® as well as all three metabolites. The other two activities, acetylcholinesterease inhibition and neuro-regeneration seem to be properties of one or another metabolite, but not of Posiphen. This grant will help evaluate the absolute and relative activities of Posiphen® and metabolites as well as test their activities in transgenic mice.

"APP mutations and duplications cause Familial Alzheimer's disease. APP triplication causes Down syndrome and high levels of APP after head trauma, stroke and brain injury lead to neurodegeneration," said Kumar Sambamurti, PhD, Professor of Neurosciences at MUSC. "Posiphen, an APP-lowering compound, should target all the toxic fragments cleaved from APP and therefore provide benefits beyond those realized by compounds that target Aβ".

**About QR Pharma, Inc.** Headquartered in Radnor, Pennsylvania, QR Pharma, Inc. is a clinical-stage specialty pharmaceutical company committed to developing therapeutics with novel approaches for the treatment of cognitive impairment, in diseases such as Alzheimer's disease (AD), Parkinson's disease (PD) and Down Syndrome (DS). QR currently has two product development programs based on oral small-molecule, blood-brain barrier passable therapeutics that target two distinct pathways for the treatment of AD.www.qrpharma.com

**About the Neurosciences Laboratory at MUSC:**
The Sambamurti laboratory has a long-standing interest in understanding the biochemical basis of Alzheimer disease and its relationship to other neurodegenerative diseases. The laboratory has proposed a hypothesis that failure of membrane protein turnover (including APP) is the triggering event in Alzheimer disease pathogenesis. Thus, rather than viewing the amyloid peptide as a target for reduction, the lab focuses on facilitation of the turnover pathways for APP and other membrane proteins. Posiphen® constitutes a novel category of agents that aim to reduce the synthesis of APP, thereby reducing the load of this protein on its turnover pathways. The hypothesis extends to other degenerative diseases, including age-related macular degeneration and glaucoma. Dr. Sambamurti is also the Co-Director of the Carol Campbell brain bank.

Contact: Claudia Muntean, MBA
Tel: 610 209 8454
Fax: 484 253 2288
muntean@qrpharma.com
www.qrpharma.com

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