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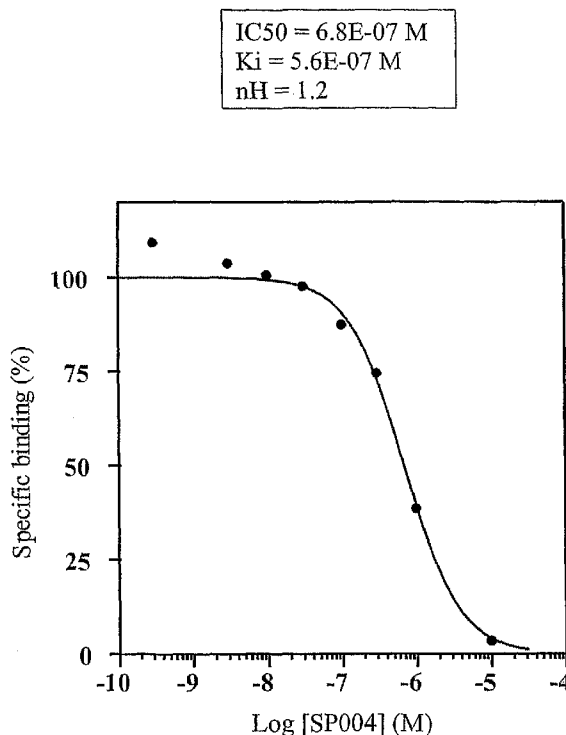
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[Continued on next page]

(54) Title: SIGMA-1 RECEPTOR LIGAND WITH ACETYLCHOLINESTERASE INHIBITION PROPERTIES

Competition curve obtained with SP004 vs. haloperidol at the human sigma-1 receptor



(57) Abstract: A novel compound and method for preventing or treating neurodegenerative diseases by inhibiting acetylcholinesterase and binding the sigma-1 receptor are disclosed. Dimethylcarbamic acid 2,3-bis-dimethylcarbamoyloxy-6-[4-(4-ethyl-piperazin-yl)-butyryl]-phenyl ester and its derivatives represent a novel therapeutic strategy against  $\beta$ -amyloid peptide induced neurotoxicity, in inhibiting acetylcholinesterase, in improving cholinergic transmission, in binding the sigma-1 receptor, and in releasing a metabolite that is active both as a sigma-1 receptor ligand and an antioxidant.

WO 2005/016276 A2