**Table 1. Characteristics of the included studies.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Study (Name, Years) | Animal (Species, Sex, Weight, N) | Anesthetic | Model (Method) | Experimental Group | Control Group | Outcome Measure | Intergroup Differences |
| Chen et al. 2005 | SD Rats Male/Female180-2209\*10 | - | Scopolamine | 20mg/kgig 14d | Saline | 1.Y-Maze (A: Learn, B: Memory)2.AChE | 1.A:P<0.01, B:P<0.012.P<0.01 |
| Chen et al. 2011 | SD RatsFemale180-2204\*10 | Pentobarbital Sodium | Hippocampus Electrical Injury | 50mg/kgig14d | Saline | 1.Morris Maze2.Number of Neurons (Using optical microscope) | 1.P<0.052.P<0.05 |
| Chen et al. 2017 | C57BL/6J Mice??3\*10 | - | D-Gal | 20mg/kgip28d | Saline | 1. Morris Maze2.NSCs3.MDA, SOD, GSH-Px4.ROS
 | 1.P<0.052.P<0.053.P<0.054.P<0.05 |
| Fang et al. 2012 | Tg mApp Mice??4\*（5-7） | - | Transgenic | 10mg/kgip3m | PBS | 1.Radial Arm Water Maze2.Aβ3.γ Secretase 4.AChE5.CREB | 1.P<0.052.P<0.013.P<0.054.P<0.015.P<0.05 |
| Hu et al. 2004 | Wistar Rats Male180-2204\*10 | - | Chronic Stress | 10,50mg/kgip7d | No Treatment | 1.Morris Maze2.Number of Neurons (using optical microscope)3.Ca2+ | 1.P<0.052.P<0.053.P<0.01 |
| Li et al. 2007 | Wistar Rats?4505\*10 | Chloral Hydrate | Quinolinic Acid | 20,40mg/kgig16d | Distilled Water | 1.Step-down Test2.Water Maze | 1.P<0.0012.P<0.01 |
| Li et al. 2014 | SD RatsMale150-2104\*10 | - | D-Gal | 20mg/kgig27d | Saline | 1.Morris Maze2.SA-β-gal3.IL-1, IL-64.SOD, GSH5.Telomere | 1.P<0.052.P<0.053.P<0.054.P<0.055.P<0.05 |
| Li et al. 2015 | Kunming MiceMale18-229\*10 | Chloral Hydrate | AΒ1-42 | 7.5,15,30mg/kg ip1m | Saline | 1.Morris Maze2.Ab1–423.Metabolite Profiles | 1.P<0.012.-3. P<0.05 |
| Li et al. 2016a | APP/PS1 Mice??4\*20 | - | Transgenic | 0.1,1,10mg/kg ip1m | Saline | 1.Fear Conditioning Experiment2.LTP3.APP, CTFs, P‑Tau4.Aβ1-42 5.BDNF | 1.P<0.052.P>0.053.P<0.054.P<0.015.P<0.05 |
| Li et al. 2016b | APP/PS1 Mice Male18-224\*10 | - | Transgenic | 30 mg/kgip1m | Saline | 1.Morris Maze2.Aβ3.Plasma Metabolites | 1.P<0.012.-3.P<0.05 |
| Liu et al. 2015 | Nestin-GFP Mice? ?5\*6 | - | D-Gal | 60mg/kgip30d | Saline | 1.Morris Maze2.PCNA+.DCX+.Tubulin+.GFAP+3.SOD, MDA, BDNF, GDNF | 1.P<0.052.-3.P<0.05,P<0.01,P<0.05,P<0.05 |
| Nie et al. 2017 | APP/PS1/Tau Mice Female?3\*(10–15) | - | Transgenic | 20mg/kgip6w | Saline | 1.Anti-Anxiety：(A:Open Field Test, B:Elevated Plus Maze Test)2.Tail Suspension Test3.Morris Water Maze4. SNP25, SYN2, Complexin 2 | 1.A:P<0.05, B:P>0.052.P<0.053.P<0.054.P<0.05 |
| Peng et al. 2011 | SD RatsMale212-2533\*5 | - | D-Gal | 20mg/kgip28d | Saline | 1.Morris Maze2.SOD, MDA3.expression of P16, P21 | 1.P<0.052.P<0.053.P<0.05 |
| Quan et al. 2013 | SD RatsMale210-2304\*10 | Chloral Hydrate | AΒ1-42 | 10mg/kgip28D | Saline | 1.Morris Maze2.Aβ, PPARγ, IDE | 1.P<0.052.P<0.05 |
| Shi et al. 2008 | SAMP8 MiceMale29-4110\*(6-8) | - | Transgenic | 2.5,5,10mg/kg ip3m | Saline | 1.Y-Maze (A: Learn, B: Memory)2.Step-down Test3.Aβ4.CREB5.BDNF6.PKA IIA | 1.A,B:P<0.012.P<0.013.P<0.054.P<0.055.P<0.056.P<0.05 |
| Shi et al. 2012 | Wistar RatsFemale?4\*10 | ？ | Ovariectomy | 10mg/kgiv8w | Saline | 1. Morris Maze2.sAPPα

3.Aβ1-42 | 1.P<0.012.P<0.013.P<0.01 |
| Shi et al. 2018 | SAMP8 Mice？？5\*10 | - | Transgenic | 7.5 mg/kgig3w | Saline | 1.Morris Maze2.Expression of Mir‑873‑5p and HMOX1 | 1.P>0.052.P>0.05 |
| Song et al. 2013 | SD RatsMale200-240 7\*12 | Chloral Hydrate | Okamoto Acid | 5,10,20mg/kg ig25d | Distilled Water | 1.Morris Maze2.Tau3.Gsk3Β | 1.P<0.052.P<0.0013.P<0.001 |
| Wang et al. 2001 | KM MiceMale32-364\*(10-11)  | Ether | AΒ25-35 | 5,10mg/kgip10d | Saline | 1.Morris Maze2.Dark Avoidance Test3.ChAT, AChE | 1.P<0.012.P<0.053.P<0.01, P<0.05 |
| Wang et al. 2010 | ICR MiceMale20–2212\*10 | - | Scopolamine | 6,12mg/kgip7d | Saline | 1.Locomotor Activity Test2.Step-Down Test3.Morris Maze4.AchE5.Ach and 5-HT | 1.P>0.052.P<0.053.P<0.014.P<0.055.P<0.05 |
| Wang et al. 2014b | KM MiceMale25-304\*15 | - | Chronic Stress | 2,5mg/kgig8w | Distilled Water | 1.Morris Maze2.Neuronal Degeneration3.ROS4.SOD, 8-ohdg 5.P47phox6.Expression of RAC17.P47phox, RAC1 And NOX2 | 1.P>0.052.-3.P<0.054.P<0.055.P<0.056.P<0.057.P<0.05 |
| Wu et al. 2007 | Wistar Rats Male250-3003\*10 | Chloral Hydrate | Hippocampus Injury | 5mg/kgip30d | Saline | 1.Morris Maze2.TPKA | 1.P<0.052.P<0.05 |
| Wu et al. 2011 | SD RatsMale250-4005\*15 | Chloral Hydrate | Hippocampus Injury | 5mg/kgip4w | Saline | 1.Morris Maze2.NGF mRNA | 1.P<0.052.P<0.05 |
| Xiang et al. 2017 | Nestin-GFP Mice?19-274\*10 | - | D-Gal | 40 mg/kgip26d | Saline | 1. Morris Maze2.Nestin-GFP (DG area)

3.SA-β-gal (CA3 Area)4.SOD, T-AOC5.IL-1Β, IL-6, TNF-Α 6.P53,P21 Protein | 1.P<0.052.P<0.053.P<0.054.P<0.055.P<0.056.P<0.05 |
| Yang et al. 2013 | C57BL/6J Mice Female?2\*(12-16) | - | Aged | 6mg/kg/3d Ig12m | Saline | 1.Life2.Y Maze3.Morris Maze4.H202, SOD5.ChAT6.mTOR | 1.P<0.052.P<0.013.P<0.054.P<0.01, P<0.055.-6.P<0.01 |
| Ye et al. 2017 | SD RatsMale180-2203\*12 | ? | Aβ1-42 | 50mg/kgig30d | Saline | 1.Morris Maze2.Aβ 3.Cell Apoptosis (TUNEL) | 1.P<0.012.-3.P<0.01 |
| Yuan et al. 2016 | APP/PS1 Mice？20-254\*6 | - | Transgenic | 100 mg/kgip8w | Saline | 1.Morris Maze2.Serum T-SO, GSH 3.Hippocampus T-SOD, GSH, GSH-Px, MDA | 1.-2.P<0.05 P>0.053.P>0.05 P>0.05 P<0.05 P<0.05 |
| Zhang et al. 2012 | Wistar RatsFemale260-3008\*12 | Chloral Hydrate | Ovariectomy+D-Gal | 5,10,20mg/kg ip6w | Saline | 1.Morris Maze2.Aβ1-42 3.ADAM 104.BACE15.Caspase 3 | 1.P<0.052.P<0.053.P<0.054.P<0.055.P<0.05 |
| Zhang et al. 2017a | SAMP8 MiceMale?3\*15 | - | Transgenic | 15 mg/kg/D Oral Gavage4m | Distilled Water | Morris Maze | P<0.05 |
| Zhang et al. 2017b | ICR MiceMale25-306\*10 | - | Dexamethasone | 1,2,4mg/kgig28d | Distilled Water | 1. Open field test
2. Neuronal injury (HE staining)
3. MAP2
4. GR
5. NLRP-1 and ASC
6. caspase-1 and caspase-5
7. IL-1β, IL-18
 | 1. P<0.01
2. P<0.01
3. -
4. P<0.01
5. P<0.01
6. P<0.05
7. P<0.05
8. P<0.05
 |
| Zhou et al. 2011 | C57BL/6J Mice Female18-224\*10 | Chloral Hydrate | AΒ25-35 | 10 mg/ kgip14d | Saline | 1.Morris Maze2.Bcl-2 | 1.P<0.052.P<0.05 |
| Zhu et al. 2014 | SD RatsMale?4\*15 | - | D-Gal | 20 mg/kgip28d | Saline | 1.Morris Maze2.SA-B-Gal3.Telomere Lengths4. Brdu (in Dentate Gyrus)5.Expression of SOX2, Nestin And Aeg16.NSCs7.SOD, MDA, GSH, GSH-Px8.IL-1b, IL-6 ,TNF-α | 1.P<0.052.P<0.013.P<0.054.P<0.055.P<0.056.P<0.057.P<0.058.P<0.05 |

Note: Aβ, the amyloid β; Ach, acetylcholine; AchE, Acetylcholinester ase; ADAM 10, a disintegrin and metallopeptidase domain 10; APP, amyloid precursor protein; BACE 1, β-site APP-cleaving enzyme 1; BDNF, brain derived neurotrophic factor; CREB, cAMP - response element binding protein; EL, escape latency; GSH, glutathione; GSH-Px, glutathione peroxidase; IDE, insulin-degrading enzyme; Ig, intragastrical administration; Ip, intraperitoneal administration; KM mice, KunMing mice; LTP, long-termpotentiation; MDA, malondialdehyde; NSCs: neural stem cells PBS,Phosphate Buffered Saline; ROS, reactive oxygen species; SD rats, Sprague Dawley rats; SNP, synaptosomal-associated protein; SOD, superoxide dismutase; SYN, synapsin; TNF-α, Tumor Necrosis Factor α.