Supplementary Information

Decreased *Npas4* and *Arc* mRNA levels in the hippocampus of aged memory-impaired wild type but not memory preserved 11β-HSD1 deficient mice

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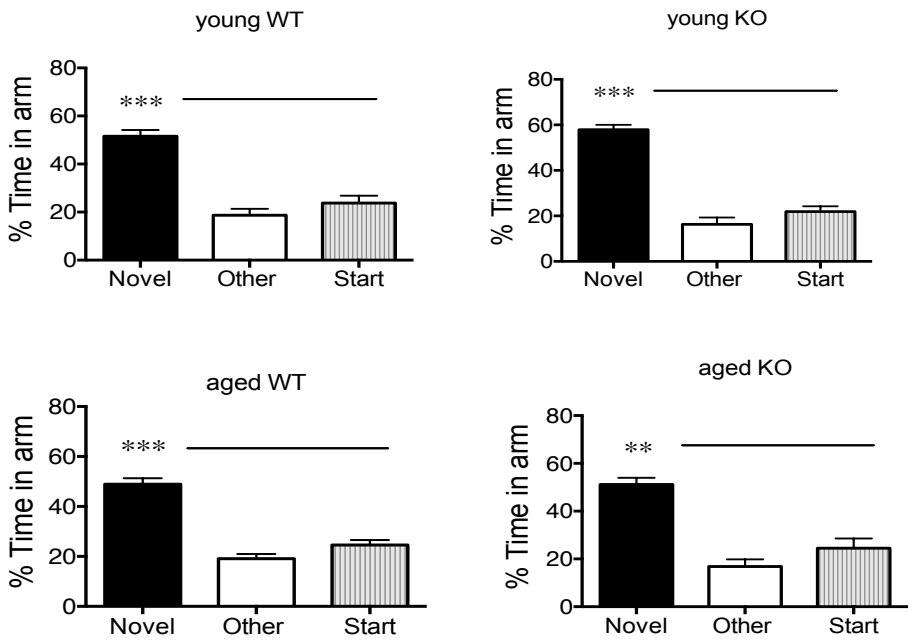

Figure S1. Initial assessment of young and aged wild-type and 11β-HSD1-deficient mice in the Y-maze following a 1 min inter-trial interval (ITI). All young (6 months, n=9/genotype) and aged (24 months, wild-type (WT) (n=13); *Hsd11b1*$^{-/-}$ (KO) (n=8)) mice showed a preference for the novel arm after a 1min ITI. *** P<0.001; **P<0.01 compared to other and start arms. Data shown are mean ± SEM.

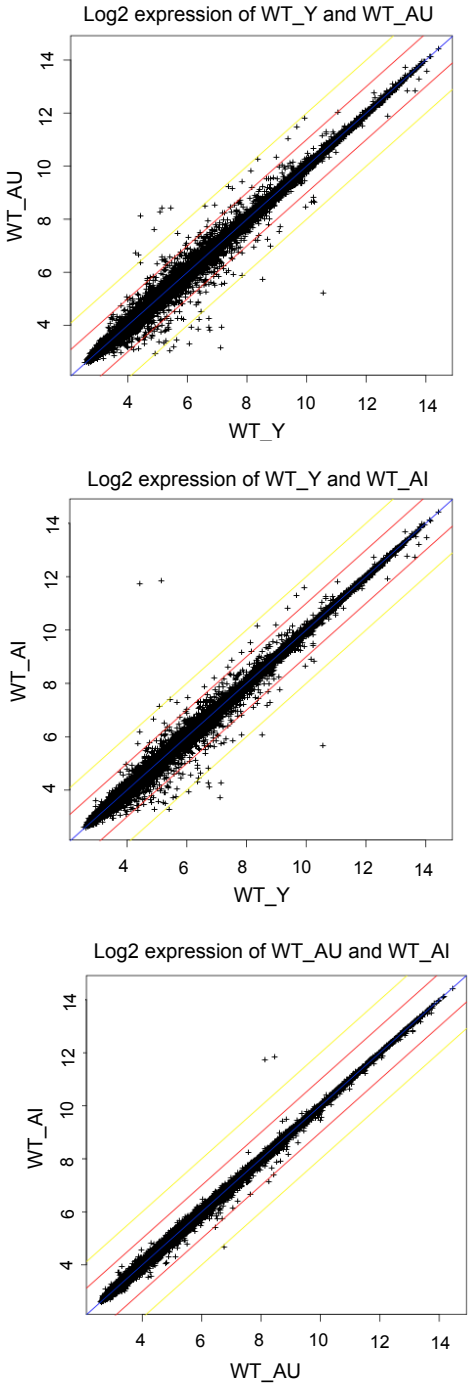

Figure S2. Comparison of scatter plots of log intensity values (four replicates combined) for young and aged wild-type mice main comparisons.
WT_AI (aged wild-type memory-impaired); WT_AU (aged wild-type memory-unimpaired); WT_Y (young wild-type). Blue line shows no change, red lines equal a 2-fold change, yellow lines are 4-fold

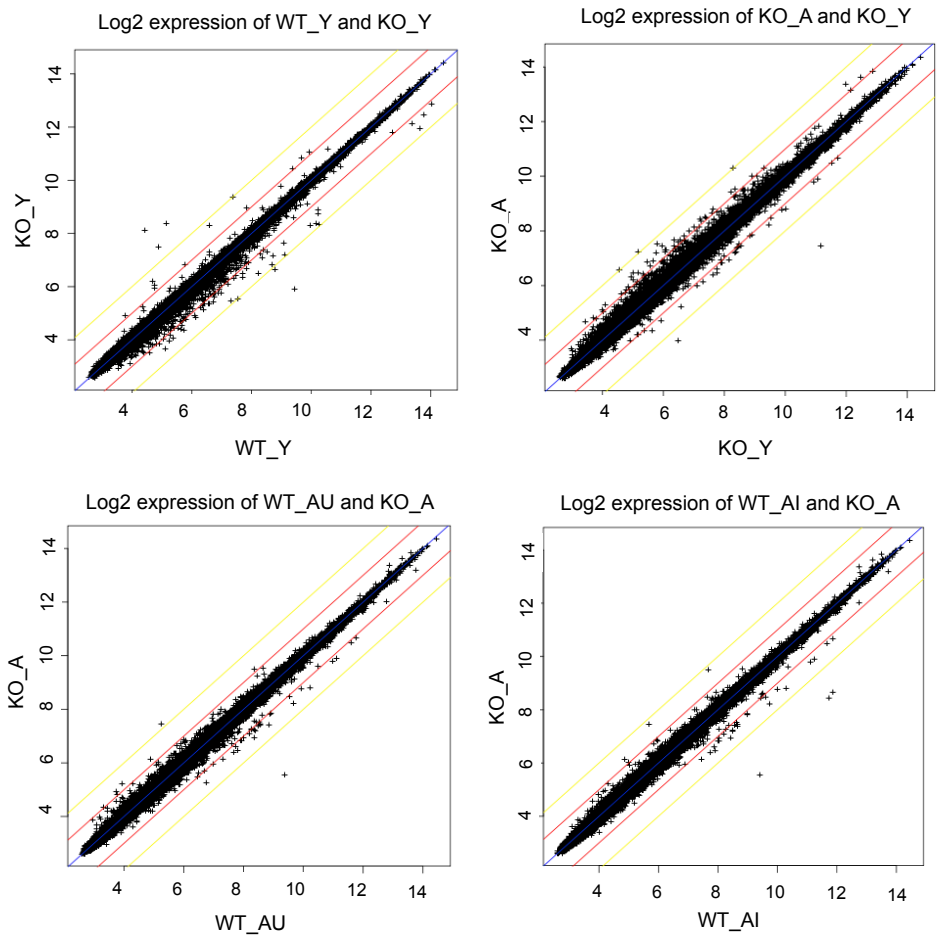

Figure S3. Comparison of scatter plots of log intensity values (four replicates combined) for young and aged wild-type and 11β-HSD1-deficient mice main comparisons.
WT_AI (aged wild-type memory-impaired); WT_AU (aged wild-type memory-unimpaired); WT_Y (young wild-type); KO_Y (young *Hsd11b1*$^{-/-}$); KO_A (aged *Hsd11b1*$^{-/-}$)
Blue line shows no change, red lines equal a 2-fold change, yellow lines are 4-fold

Supplementary Table S1

Hippocampal genes up-regulated with ageing in wild-type and 11β-HSD1-deficient mice but not affected by genotype. Gene expression level fold changes shown are from comparisons of aged (24 months) wild-type (WT_A) mice (combined WT_AU and WT_AI mice) with corresponding young (6 months) wild-type (WT) or *Hsd11b1*$^{-/-}$ (KO) mice. *, P<0.05, **P<0.01, RP scores

Affymetrix ID	Gene symbol	Gene title	Fold change WT	Fold change KO
1426508_at	*Gfap*	glial fibrillary acidic protein	1.6 *	2 **
1449401_at	*C1qc*	complement component 1, q subcomponent, C chain	1.6 *	1.7 **
1417063_at	*C1qb*	complement component 1, q subcomponent, beta polypeptide	1.5 *	1.6 **
1419100_at	*Serpina3n*	serine (or cysteine) peptidase inhibitor, clade A, member 3N	2.0 *	1.8 *
1449254_at	*Spp1*	secreted phosphoprotein 1	1.7 *	1.6 *
1427371_at	*Abca8a*	ATP-binding cassette, sub-family A (ABC1), member 8a	1.6 **	1.8 **
1452428_a_at	*B2m*	beta-2 microglobulin	1.5 *	1.6 *
1418204_s_at	*Aif1*	allograft inflammatory factor 1	1.5 *	1.7 **
1435477_s_at	*Fcgr2b*	Fc receptor, IgG, low affinity IIb	1.9 *	2.0 **
1444564_at	*Apod*	apolipoprotein D	2.0 *	2.0 **
1450641_at	*Vim*	Vimentin	1.6 *	1.8 **
1422640_at	*Pcdhb9*	protocadherin beta 9	2.0 **	1.9 **
1454268_a_at	*Cyba*	cytochrome b-245, alpha polypeptide	1.6 *	1.8 **
1448620_at	*Fcgr3*	Fc receptor, IgG, low affinity III	1.5 *	1.7 **
1460330_at	*Anxa3*	annexin A3	1.4 *	1.6 **
1421792_s_at	*Trem2*	triggering receptor expressed on myeloid cells 2	1.5 **	1.5 *
1418580_at	*Rtp4*	receptor transporter protein 4	2.0 *	2.0 **
1443745_s_at	*Dmp1*	dentin matrix protein 1	1.6 *	1.9 **
1423547_at	*Lyz2*	lysozyme 2	2.9 **	2.4 *
1427076_at	*Mpeg1*	macrophage expressed gene 1	1.6 *	2.0 **
1450792_at	*Tyrobp*	TYRO protein tyrosine kinase binding protein	1.6 *	1.8 **
1434342_at	*S100b*	S100 protein, beta polypeptide, neural	1.2 *	1.7 **