

	Figure number	Test	Technic		Treatment	Genotype	Sex	Age	Number	Mean	SEM(±)	Statistical test	Stat	P value	post hoc test	Comparison	t	P value
Figure	2B	co-localization test	Immunohistochemistry	mCherry+ cells/cell types	–peptide/+peptide nanoparticle injection	WT	M	7-8W	10 (for each groups)		0.06512	Two-way ANOVA	F(2, 54) = 63.75	<0.0001	Bonferroni's test	GFAP(– peptide)/GFAP(+ peptide)		<0.0001
																Iba1(– peptide)/Iba1(+ peptide)		<0.0001
																NeuN(– peptide)/NeuN(+ peptide)		0.9964
	2D	co-localization test	Immunohistochemistry	mCherry+ cells/10 cells	–peptide/+peptide nanoparticle injection	WT	M	7-8W	10 (for each groups)			Two-way ANOVA	F(2, 54) = 54.48	<0.0001	Bonferroni's test	GFAP(– peptide)/GFAP(+ peptide)		<0.0001
																Iba1(– peptide)/Iba1(+ peptide)		<0.0001
																NeuN(– peptide)/NeuN(+ peptide)		0.2717
	2E	co-localization test	Immunohistochemistry	mCherry+ cells/cell units	–peptide/+peptide nanoparticle injection	WT	M	7-8W	10 (for each groups)			Two-way ANOVA	F(2, 54) = 89.73	<0.0001	Bonferroni's test	GFAP(– peptide)/GFAP(+ peptide)		<0.0001
																Iba1(– peptide)/Iba1(+ peptide)		<0.0001
																NeuN(– peptide)/NeuN(+ peptide)		0.9944
	3E	cell viability	EZ-cytox assay		NPs	primary astrocyte						unpaired t-test						
	4B	Behavior test	wire hang test	Control/RB model	Rose bengal modeling	WT	M	7-8W	7 (for each groups)	-141.3	8.927	unpaired t-test		<0.0001				
	4H	Behavior test	wire hang test		–peptide/+peptide nanoparticle injection	WT	M	7-8W	7 (for each groups)		4.085	One-way ANOVA	F(2,54) = 89.73	<0.0001	Tukey's test	pNC/pSOX9 (NPs)		0.0063
																pNC/pSOX9 (AstroLa NPs)		<0.0001
	4J	Infarct	volume (mm ₃)		–peptide/+peptide nanoparticle injection	WT	M	7-8W	7 (for each groups)			One-way ANOVA	F(6, 18)=0.7666	<0.0001	Tukey's test	pSOX9(NPs/AstroLa NPs)		0.0065
	5B	co-localization test	Immunohistochemistry	SOX9 tdTomato.GFAP+ cell (in RB model)	–peptide/+peptide nanoparticle injection	WT	M	7-8W	6 (for each groups)	5.167	0.9098	unpaired t-test		0.0002				
	5C	SOX9 expression	Western blot	pNC/pSOX9	–peptide/+peptide nanoparticle injection	WT	M	7-8W	5 (for each groups)			Two-way ANOVA	F(4, 12) = 0.6617	<0.0001	Bonferroni's test	pNC/pSOX9 (NPs)		0.8159
																pSOX9(NPs/AstroLa NPs)		0.0006
	5D	PTGDS expression	Western blot	pSOX9	–peptide/+peptide nanoparticle injection	WT	M	7-8W	5 (for each groups)	2.572	0.3601	unpaired t-test		0.0024				
	5E	PGD ₂	ELISA	pNC/pSOX9	–peptide/+peptide nanoparticle injection	WT	M	7-8W	6 (for each groups)			Two-way ANOVA	F(5, 15) = 0.251	<0.0001	Bonferroni's test	pNC/pSOX9 (NPs)		0.6284
																pSOX9(NPs/AstroLa NPs)		0.016
	6C	PGD2	ELISA	pNC/pSOX9		BV2 cell			6 (for each groups)	53.61	5.642	unpaired t-test		<0.0001				
	6E	iNOS	qRT-PCR	pNC/pSOX9		BV2 cell			4 (For each	-2.65	0.4031	unpaired t-test		0.00006				
		TNF α								-3.175	0.4029			0.0002				