

Modified-SHIRPA of <i>St8sia3</i> WT/KO mice			<i>St8sia3</i> WT Mice										<i>St8sia3</i> KO Mice									
List of tests in modified-SHIRPA (Individual score for each mouse)																						
The scores in black indicate criteria by CSBL/6J mice																						
Items	Score	Description	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
1.Coat color	0=	Normal																				
	1=	Dilution																				
	2=	Whitespot																				
	3=	Color change																				
	4=	Other																				
2.Hair length	0=	Normal																				
	1=	alopecia																				
	2=	short																				
	3=	long																				
	4=	Other																				
3.Hair morphology	0=	Normal																				
	1=	curl																				
	2=	Other																				
	0=	Gasping, irregular																				
	1=	slow, shallow																				
4.Respiration rate	0=	Normal																				
	1=	Normal																				
	2=	Normal																				
	3=	Hyperventilation																				
	4=	Other																				
5.Tremor	0=	None																				
	1=	Mild																				
	2=	Marked																				
	0=	Completely flat																				
	1=	Lying on side																				
6.Body position	2=	Lying prone																				
	3=	Sitting or standing																				
	4=	Rearing on hind legs																				
	0=	Repeated vertical leaping																				
	1=	None, scratching																				
7. Spontaneous activity	1=	Casual scratch, groom, slow movement																				
	2=	Vigorous scratch, groom, moderate movement																				
	3=	Vigorous, rapid/dart movement																				
	4=	Extremely vigorous, rapid/dart movement																				
	0=	None																				
8.Defecation	0=	None																				
	1=	Done																				
	2=	Done																				
	3=	Done																				
	4=	Done																				
9.Urination	0=	None																				
	1=	Done																				
	2=	Done																				
	3=	Done																				
	4=	Done																				
10.Elapsed time before the mouse starts to move (secs)	0=	None																				
	1=	Done																				
	2=	Done																				
	3=	Done																				
	4=	Done																				
11.Locomotor activity	0=	Coma																				
	1=	Prolonged freeze, then slight movement																				
	2=	Extended freeze, then moderate movement																				
	3=	Brief freeze (few seconds), then active movement																				
	4=	Momentary freeze, then swift movement																				
12.transfer arousal	0=	None, immediate movement																				
	1=	None																				
	2=	Coat stood on end																				
	3=	Eyes wide open																				
	4=	Eyes 1/2 closed																				
13.Piloerection	0=	None																				
	1=	Coat stood on end																				
	2=	Eyes wide open																				
	3=	Eyes 1/2 closed																				
	4=	Eyes closed																				
14.Palpebral closure	0=	None																				
	1=	Prever reflex (backwards flick of pinnae)																				
	2=	Jump less than 1cm																				
	3=	Jump more than 1cm																				
	4=	Other																				
15.Startle response	0=	Normal																				
	1=	Fluid but abnormal																				
	2=	Limited movement only																				
	3=	Incapacity																				
	4=	Markedly flattened																				
16.Gait	0=	Barely touches																				
	1=	Normal (3mm elevation)																				
	2=	Elevated (more than 3mm elevation)																				
	3=	Dragging (more than 3mm elevation)																				
	4=	Other																				
17.Pelvic elevation	0=	None																				
	1=	Horizontally extended																				
	2=	Elevated/Straub Tail																				
	3=	No response																				
	4=	Other																				
18.Tail elevation	0=	Mild (escape response to firm stroke)																				
	1=	Moderate (rapid response to light stroke)																				
	2=	Vigorous (escape response to approach)																				
	3=	Struggles when held by tail																				
	4=	Other																				
19.Touch escape	0=	Struggles when held by neck (finger grip, not scruff)																				
	1=	Struggles when held by neck (finger grip, not scruff)																				
	2=	Struggles when held supine (on back)																				
	3=	Struggles when held by hind legs																				
	4=	No straggle																				
20.Positional passivity	0=	Absent																				
	1=	Present																				
	2=	Absent																				
	3=	Present																				
	4=	Present																				
21.Trunk curl	0=	None																				
	1=	Upon nose contact																				
	2=	Upon vibrasense contact																				
	3=	Before vibrasense contact (18mm)																				
	4=	Early vigorous extension (25mm)																				
22.Limb grasping	0=	None																				
	1=	Slight grip, semi-effective																				
	2=	Moderate grip, effective																				
	3=	Active grip, effective																				
	4=	Unusually effective																				
23.Visual Placing	0=	Flaccid, no																				

41. Abdominal tone	1=	Slight resistance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	2=	Extreme resistance, board like																				
	0=	Blanched																				
	1=	Pink																				
42. Skin color	1=	Pink	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	2=	Bright, deep red flush																				
	3=	Mild pigmentation																				
	4=	Dark footpad, pigmentation																				
43. Limb morphology(FR)	0=	Normal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Polydactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2=	Ectodactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3=	Abnormality in upper limb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44. Limb morphology(FL)	0=	Normal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Polydactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2=	Ectodactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3=	Abnormality in upper limb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45. Limb morphology(HR)	0=	Normal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Polydactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2=	Ectodactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3=	Abnormality in upper limb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
46. Limb morphology(HL)	0=	Normal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Polydactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2=	Ectodactyl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3=	Abnormality in upper limb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
47. Limb tone	0=	No resistance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1=	Slight resistance																				
	2=	Moderate resistance																				
	3=	Marked resistance																				
48. Wire maneuver	0=	Active grip with hindlegs (5secs)	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	2	1	2	0	
	1=	Difficulty to grip with hindlegs																				
	2=	Unable to grip with hindlegs																				
	3=	Unable to lift hindlegs, falls within seconds																				
49. Righting Reflex	0=	No impairment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Lands on side																				
	2=	Lands on back																				
	3=	Falls to right when placed on back																				
50. Contact righting reflex	0=	Absent	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1=	Present																				
51. Negative geotaxis	0=	Turns and climbs the grid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Turns but then freezes																				
	2=	Moves, but fails to turn																				
	3=	Does not move within 30 secs																				
52. Fear	0=	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Freezes during transfer arousal																				
	0=	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Struggle during spine restraint																				
53. Irritability	0=	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Struggle during spine restraint																				
54. Aggression	0=	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1=	Provoked biting or attack																				
55. Vocalization	0=	None	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1=	Provoked during handling																				
56. Bizarre Behaviour	0) No Phenotype																					
	a) HF	Head flicking or head shaking																				
	b) HS	Head searching - repetitive																				
	c) H	Hallucinating																				
	d) B	Compulsive biting - usually of grid floor																				
	e) L	Compulsive licking - usually of glass jar																				
	f) SB	Self destructive biting																				
	g) P	Prancing forelimbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	h) UW	Upright walking - hind limbs only																				
	i) AW	Aimless wandering																				
	j) C	Circling																				
	k) W	Waltzing - rapid turning in circles																				
	l) R	Retropulsion - animal walks backwards																				
	m) D	Spatial disorientation - walking or stumbling into objects																				
n) HB	Head bobbing																					
57. Convulsions	0) No convulsion																					
	a-1) C	Clonic																				
	a-2) Cs	Clonic symmetrical																				
	a-3) Rn	Running excitement																				
	a-4) Ch	Champing - clonus of the jaws only																				
	a-5) P	Popcorn																				
	a-6) A	Asphyxia																				
	b-1) T	Tonic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	b-1) Tt	Tonic flexion occurs without extension																				
	b-2) Op	Opisthotonus																				
	b-3) Em	Emprosthotonus																				
	c-1) Rr	Rock and roll																				
	c-2) Su	Sitting up																				
	c-3) Pr	Pravine																				
58. Body Weight (g)			26.7	25.0	25.2	27.8	30.1	27.1	26.4	24.0	27.0	25.9	28.9	27.9	26.9	27.2	29.4	27.7	26.1	27.5	28.5	30.7