

Supplementary materials of “ Establishment of A Novel Comprehensive protocol for Assessing the Severity of Subarachnoid Hemorrhage in Circle Willis Perforation Mouse Model”

Workflow:

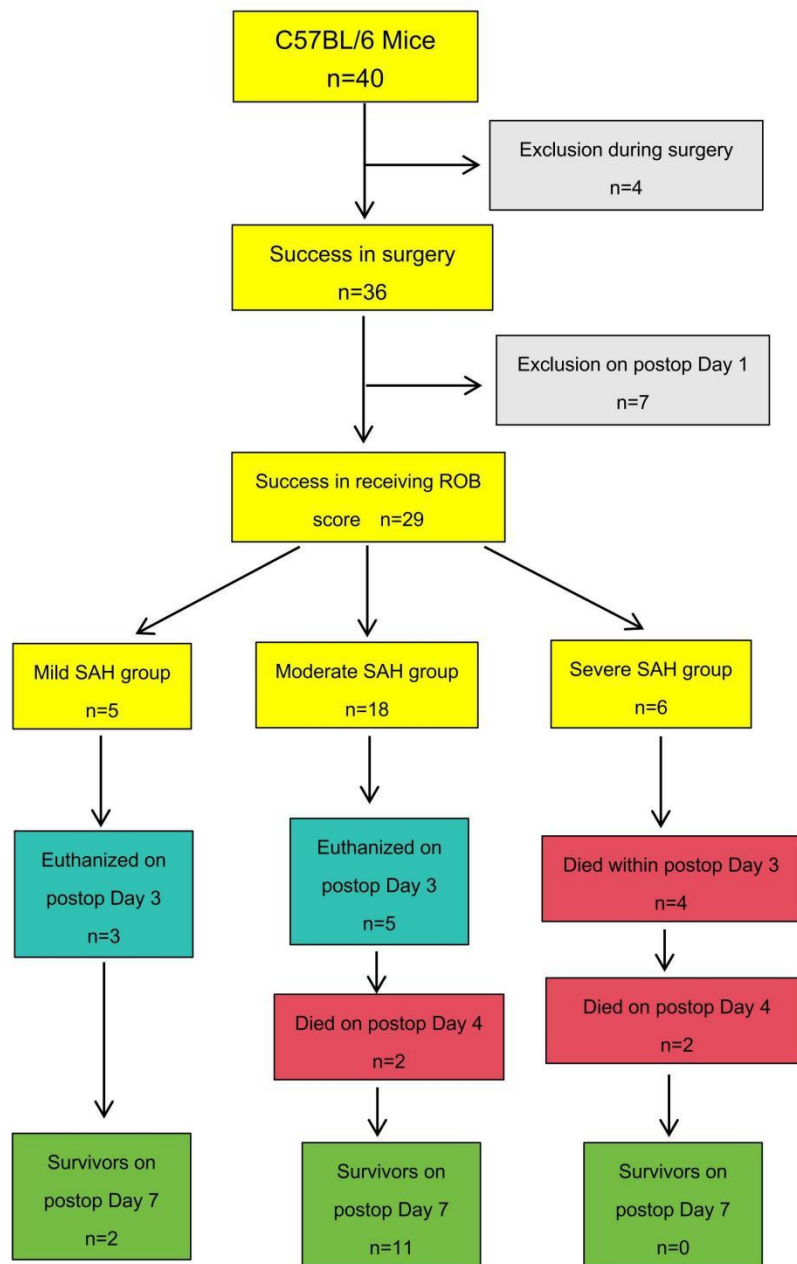


Figure 1: Schematic image of autopsy score

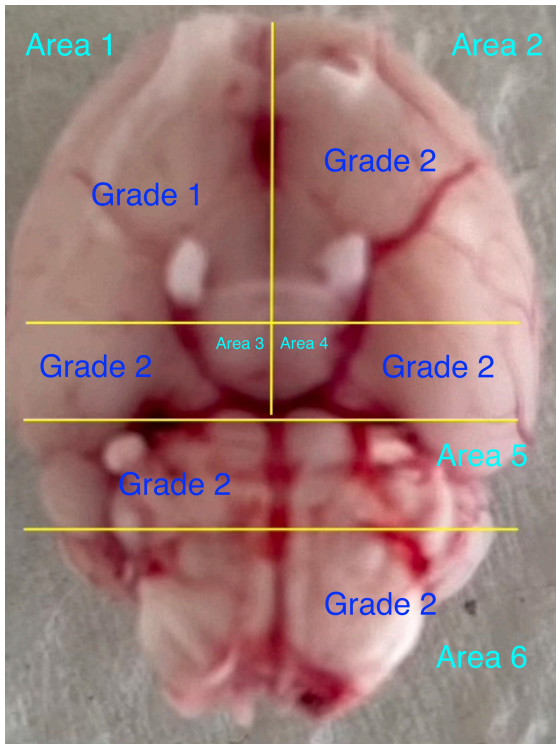


Fig. 1: Following the criteria established by Sugawara, T., et al., the ventral surface of the mouse brain was divided into six distinct areas. Each of these areas received a score ranging from 0 to 3 based on specified criteria.

Table 1: Autopsy Grade Criteria

Grade	Criteria
0	no subarachnoid blood
1	minimal subarachnoid blood
2	moderate blood clot with recognizable arteries
3	blood clot obliterating all arteries within the segments
mild SAH: 0-7, moderate SAH: 8–12, severe SAH : 13–18.	

Reference:

Sugawara, T., et al., A new grading system evaluating bleeding scale in filament perforation subarachnoid hemorrhage rat model. J Neurosci Methods, 2008. 167(2): p. 327-34.

Figure 2: Original image of post-operative Day 3 autopsy

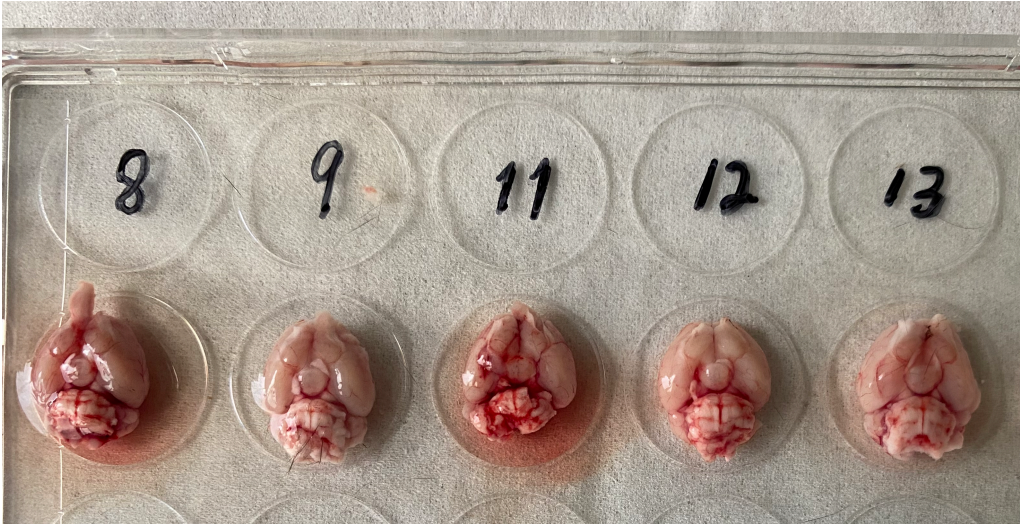


Table 2: Post-operative D3 comparison between autopsy score and ROB score

ID	T8	T9	T11	T12	T13
Area 1	2	1	2	0	1
Area 2	1	0	1	0	1
Area 3	2	2	3	2	1
Area 4	2	2	3	2	2
Area 5	2	1	2	2	2
Area 6	2	1	2	1	2
Autopsy score	11	7	13	7	9
Autopsy severity	moderate	mild	severe	mild	moderate
ROB score D3	10	14	8	11	10
ROB severity	moderate	mild	moderate	mild	moderate

Figure 3: Original image of post-operative Day 7 autopsy

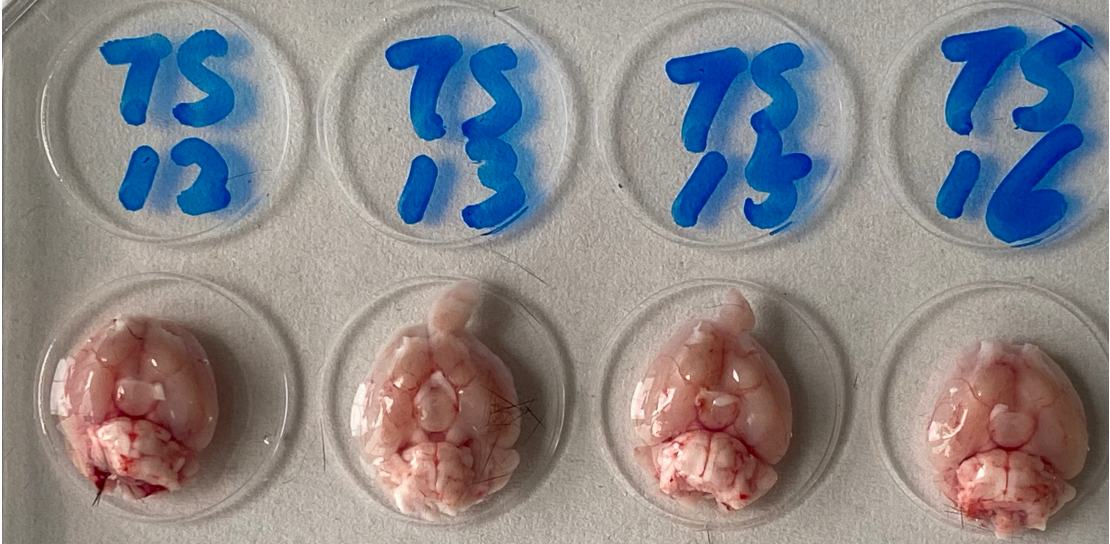
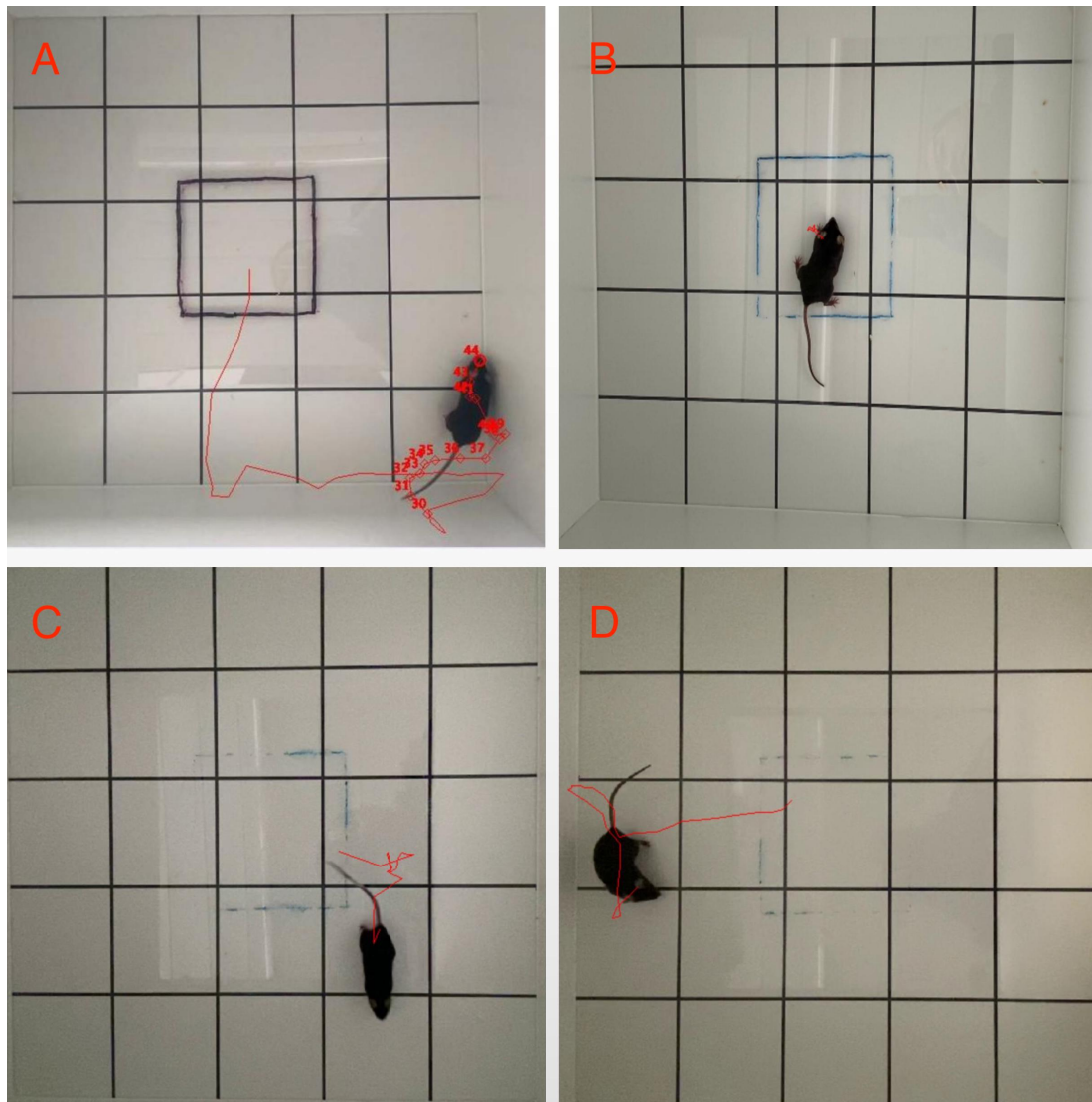


Table 3: Post-operative D7 comparison between autopsy score and ROB score

ID	TS12	TS13	TS15	TS16
Area 1	0	1	0	0
Area 2	0	0	0	0
Area 3	2	0	2	2
Area 4	2	0	2	2
Area 5	1	1	1	1
Area 6	1	0	0	1
Autopsy Score	6	2	5	6
Autopsy severity	mild	mild	mild	mild
ROB score D7	12	8	14	12
ROB severity	mild	moderate	mild	mild

Figure. 4: Trajectory analysis of mouse movement in the open-field test



In this figure, the video analysis software "Tracker" was utilized to automatically analyze and generate trajectories illustrating the movement patterns of mice in the arena. The red line represents the tracked movement distances for mice in different conditions.

A: Depicts a sham mouse exhibiting swift and positive movement during the testing process.

B: Illustrates a mouse in a severe condition, displaying minimal movement and almost a frozen state throughout the testing process.

C: Illustrates a moderate mouse movement, covering approximately half the distance compared to the sham mouse.

D: Shows a mild status mouse movement, which closely resembles the movement pattern of the sham mouse.