

Table 3 Reliable correlation coefficients in the group of rats with IR modeling and subsequent immediate therapy with MSCs obtained from the human umbilical cord jelly**Positive (direct) correlation in the group of rats with IR modeling**

Variable	Variable	r_s	p
Glucose content in the somatosensory cortex (day 7)	duration of grooming episodes (day 7)	$r_s = 0,90$	p<0,05
Glucose content in the somatosensory cortex (day 7)	integral fluorescence density of Iba+microglia on the frontal slices of CA1 hippocampal zone (day 7)	$r_s = 0,79$	p<0,05
Lactate content in the somatosensory cortex (day 7)	number of intact nuclei in the hippocampus (day 7)	$r_s = 0,90$	p<0,05
Lactate content in the somatosensory cortex (day 7)	number of intact nuclei in the hippocampus (day 14)	$r_s = 0,90$	p<0,05
Pyruvate content in the somatosensory cortex (day 7)	number of ambulation episodes through the peripheral squares (day 7)	$r_s = 0,93$	p<0,01
Pyruvate content in the somatosensory cortex (day 7)	number of ambulation episodes through the central squares (day 14)	$r_s = 0,78$	p<0,05
Pyruvate content in the somatosensory cortex (day 7)	integral fluorescence density of NeuN+ neurons on the frontal sections of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	p<0,05
Ratio of lactate/pyruvate content in the somatosensory cortex (day 7)	number of damaged nuclei (karyopyknosis, karyorrhesis) in the somatosensory cortex (day 14)	$r_s = 0,90$	p<0,05
Ratio of lactate/pyruvate content in the somatosensory cortex (day 7)	integral fluorescence density of Iba+microglia on the frontal slices of CA1 hippocampal zone (day 14)	$r_s = 0,90$	p<0,05
Ratio of lactate/pyruvate content in the somatosensory cortex (day 7)	SUB-G0G1 areas on the DNA histograms – RN1 before the G0G1 peak, which indicates cell nuclei with DNA content < 2s in the hippocampus	$r_s = 0,90$	p<0,05
MDA content in the somatosensory cortex (day 7)	number of intact nuclei in the hippocampus (day 7)	$r_s = 0,90$	p<0,05
MDA content in the somatosensory cortex (day 7)	number of intact nuclei in the hippocampus (day 14)	$r_s = 0,90$	p<0,05
MDA content in the somatosensory cortex (day 7)	duration of grooming episodes (day 14)	$r_s = 0,79$	p<0,05
SDH activity in the somatosensory cortex (day 7)	number of damaged nuclei (karyopyknosis, karyorrhesis) in the somatosensory cortex (day 7)	$r_s = 0,90$	p<0,05
SOD activity in the somatosensory cortex (day 7)	integral fluorescence density of GFAP+astrocytes on the frontal slices of CA1 hippocampal zone (day 14)	$r_s = 0,90$	p<0,05
Proteins' carbonyl groups in the somatosensory cortex (day 7)	number of ambulation episodes through the peripheral squares (day 7)	$r_s = 0,84$	p<0,05
Proteins' carbonyl groups in the somatosensory cortex (day 7)	number of clumbing episodes (day 7)	$r_s = 0,89$	p<0,05
Proteins' carbonyl groups in the somatosensory cortex (day 7)	duration of clumbing episodes (day 7)	$r_s = 0,93$	p<0,05
NADPH oxidase activity in the somatosensory cortex (day 7)	number of clumbing episodes (day 14)	$r_s = 0,81$	p<0,05
NADPH oxidase activity in the somatosensory cortex (day 7)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = 0,87$	p<0,05
Protein content in the somatosensory cortex (day 7)	number of rearing episodes (day 7)	$r_s = 0,76$	p<0,05
Protein content in the somatosensory cortex (day 7)	duration of rearing episodes (day 7)	$r_s = 0,76$	p<0,05
Protein content in the somatosensory cortex (day 7)	latent period duration of rearing episodes (day 7)	$r_s = 0,76$	p<0,05
Protein content in the somatosensory cortex (day 7)	number of ambulation episodes through the central squares (day 7)	$r_s = 0,88$	p<0,05
Glucose content in the hippocampus (day 7)	integral fluorescence density of Iba+microglia on the frontal slices of CA1 hippocampal zone (day 7)	$r_s = 0,90$	p<0,05
Lactate content in the hippocampus (day 7)	duration of grooming episodes (day 14)	$r_s = 0,79$	p<0,05
Lactate content in the hippocampus (day 7)	number of neuron nuclei in 1 mm ² of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	p<0,05
NADPH oxidase activity in the hippocampus (day 7)	number of clumbing episodes (day 14)	$r_s = 0,83$	p<0,05
NADPH oxidase activity in the hippocampus (day 7)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = 0,95$	p<0,001

Protein content in the hippocampus (day 7)	number of rearing episodes (day 7)	$r_s = 0,76$	$p < 0,05$
Protein content in the hippocampus (day 7)	duration of rearing episodes (day 7)	$r_s = 0,76$	$p < 0,05$
Protein content in the hippocampus (day 7)	latent period duration of rearing episodes (day 7)	$r_s = 0,76$	$p < 0,05$
Protein content in the hippocampus (day 7)	number of ambulation episodes through the central squares (day 7)	$r_s = 0,88$	$p < 0,05$
Glucose content in the somatosensory cortex (day 14)	latent period duration of clumping (day 7)	$r_s = 0,86$	$p < 0,05$
Glucose content in the somatosensory cortex (day 14)	number of neuron nuclei in 1 mm ² of the CA1 hippocampal zone (day 7)	$r_s = 0,90$	$p < 0,05$
Glucose content in the somatosensory cortex (day 14)	number of intact nuclei in the hippocampus (day 7)	$r_s = 0,90$	$p < 0,05$
Glucose content in the somatosensory cortex (day 14)	number of intact nuclei in the hippocampus (day 14)	$r_s = 0,90$	$p < 0,05$
Ratio of lactate/pyruvate content in the somatosensory cortex (day 14)	percentage ratio of cells in the G0G1 phase to all cells of the cell cycle in the hippocampus (DNA content = 2s) (day 7)	$r_s = 0,90$	$p < 0,05$
Ratio of lactate/pyruvate content in the somatosensory cortex (day 14)	integral fluorescence density of NeuN+ neurons on the frontal sections of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	$p < 0,05$
MDA content in the somatosensory cortex (day 14)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = 0,78$	$p < 0,05$
SDH activity in the somatosensory cortex (day 14)	duration of ambulation episodes through the peripheral squares (day 14)	$r_s = 0,89$	$p < 0,05$
SDH activity in the somatosensory cortex (day 14)	latent period duration of clumping (day 14)	$r_s = 0,96$	$p < 0,01$
Proteins' carbonyl groups in the somatosensory cortex (day 14)	percentage ratio of cells in the G0G1 phase to all cells of the cell cycle in the hippocampus (DNA content = 2s) (day 7)	$r_s = 0,90$	$p < 0,05$
Proteins' carbonyl groups in the somatosensory cortex (day 14)	integral fluorescence density of NeuN+ neurons on the frontal sections of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	duration of ambulation episodes through the peripheral squares (day 14)	$r_s = 0,79$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	latent period duration of ambulation through the central squares (day 14)	$r_s = 0,91$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	number of grooming episodes (day 14)	$r_s = 0,82$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	integral fluorescence density of RECA-1 positive blood vessels in the CA1 hippocampal zone (day 7)	$r_s = 0,90$	$p < 0,05$
NADPH oxidase activity in the somatosensory cortex (day 14)	number of ambulation episodes through the central squares (day 14)	$r_s = 0,78$	$p < 0,05$
NADPH oxidase activity in the somatosensory cortex (day 14)	duration of ambulation episodes through the peripheral squares (day 7)	$r_s = 0,82$	$p < 0,05$
NADPH oxidase activity in the somatosensory cortex (day 14)	integral fluorescence density of GFAP+astrocytes on the frontal slices of CA1 hippocampal zone (day 14)	$r_s = 0,90$	$p < 0,05$
NOS activity in the somatosensory cortex (day 14)	duration of ambulation episodes through the peripheral squares (day 7)	$r_s = 0,86$	$p < 0,05$
NOS activity in the somatosensory cortex (day 14)	number of ambulation episodes through the central squares (day 7)	$r_s = 0,84$	$p < 0,05$
Glucose content in the hippocampus (day 14)	latent period duration of grooming (day 7)	$r_s = 0,86$	$p < 0,05$
Glucose content in the hippocampus (day 14)	latent period duration of clumping (day 7)	$r_s = 0,89$	$p < 0,05$
Lactate content in the hippocampus (day 14)	duration of grooming episodes (day 14)	$r_s = 0,71$	$p < 0,05$
Lactate content in the hippocampus (day 14)	latent period duration of clumping (day 7)	$r_s = 0,84$	$p < 0,05$
Lactate content in the hippocampus (day 14)	number of neuron nuclei in 1 mm ² of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 14)	latent period duration of ambulation through the peripheral squares (day 14)	$r_s = 0,85$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 14)	number of neuron nuclei in 1 mm ² of the CA1 hippocampal zone (day 14)	$r_s = 0,90$	$p < 0,05$
NOS activity in the hippocampus (day 14)	number of ambulation episodes through the central squares (day 7)	$r_s = 0,84$	$p < 0,05$
NOS activity in the hippocampus (day 14)	duration of ambulation episodes through the central squares (day 7)	$r_s = 0,86$	$p < 0,05$

Protein content in the hippocampus (day 14)	duration of ambulation episodes through the peripheral squares (day 14)	$r_s = 0,79$	$p < 0,05$
Protein content in the hippocampus (day 14)	duration of ambulation episodes through the central squares (day 14)	$r_s = 0,91$	$p < 0,01$
Protein content in the hippocampus (day 14)	number of grooming episodes (day 14)	$r_s = 0,82$	$p < 0,05$
Protein content in the hippocampus (day 14)	fluorescence density of RECA-1 positive blood vessels in the CA1 hippocampal zone (day 7)	$r_s = 0,90$	$p < 0,05$
Negative (or inverse) correlation in the group of rats with IR modeling			
Variable	Variable	r_s	p
Glucose content in the somatosensory cortex (day 7)	percentage ratio of cells in the G0G1 phase to all cells of the cell cycle in the somatosensory cortex (DNA content = 2s) (day 7)	$r_s = -0,90$	$p < 0,05$
Glucose content in the somatosensory cortex (day 7)	percentage ratio of the G2 + M phase cells so all cells of the cell cycle in the somatosensory cortex (DNA = 4s) (day 7)	$r_s = -0,90$	$p < 0,05$
Pyruvate content in the somatosensory cortex (day 7)	number of damaged nuclei (karyopyknosis, karyorrhesis) in the somatosensory cortex (day 14)	$r_s = -0,90$	$p < 0,05$
Ratio of lactate/pyruvate content in the somatosensory cortex (day 7)	number of ambulation episodes through the central squares (day 14)	$r_s = -0,84$	$p < 0,05$
SDH activity in the somatosensory cortex (day 7)	latent period duration of grooming (day 7)	$r_s = -0,82$	$p < 0,05$
SDH activity in the somatosensory cortex (day 7)	latent period duration of ambulation through the peripheral squares (day 7)	$r_s = -0,76$	$p < 0,05$
NADPH oxidase activity in the somatosensory cortex (day 7)	duration of ambulation episodes through the central squares (day 7)	$r_s = -0,87$	$p < 0,05$
Protein content in the somatosensory cortex (day 7)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = -0,90$	$p < 0,05$
Protein content in the somatosensory cortex (day 7)	number of clumbing episodes (day 14)	$r_s = -0,76$	$p < 0,05$
Glucose content in the hippocampus (day 7)	percentage ratio of cells in the G0G1 phase to all cells of the cell cycle in the somatosensory cortex (DNA content = 2s) (day 7)	$r_s = -0,90$	$p < 0,05$
Glucose content in the hippocampus (day 7)	percentage ratio of the G2 + M phase cells so all cells of the cell cycle in the hippocampus (DNA = 4s) (day 7)	$r_s = -0,90$	$p < 0,05$
Lactate content in the hippocampus (day 7)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = -0,79$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 7)	duration of ambulation episodes through the central squares (day 7)	$r_s = -0,85$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 7)	duration of grooming episodes (day 14)	$r_s = -0,77$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 7)	duration of ambulation episodes through the peripheral squares (day 14)	$r_s = -0,82$	$p < 0,05$
Protein content in the hippocampus (day 7)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = -0,90$	$p < 0,05$
Protein content in the hippocampus (day 7)	number of clumbing episodes (day 14)	$r_s = -0,76$	$p < 0,05$
Glucose content in the somatosensory cortex (day 14)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = -0,86$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	number of clumbing episodes (day 7)	$r_s = -0,78$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	duration of clumbing episodes (day 7)	$r_s = -0,86$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	number of rearing episodes (day 7)	$r_s = -0,80$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	duration of rearing episodes (day 7)	$r_s = -0,80$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	latent period duration of rearing episodes (day 7)	$r_s = -0,80$	$p < 0,05$
Lactate content in the somatosensory cortex (day 14)	number of intact nuclei in the somatosensory cortex (day 7)	$r_s = -0,90$	$p < 0,05$
Pyruvate content in the somatosensory cortex (day 14)	number of grooming episodes (day 7)	$r_s = -0,82$	$p < 0,05$
Pyruvate content in the somatosensory cortex (day 14)	latent period duration of ambulation through the central squares (day 7)	$r_s = -0,78$	$p < 0,05$
Pyruvate content in the somatosensory cortex (day 14)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = -0,78$	$p < 0,05$
Pyruvate content in the somatosensory cortex (day 14)	percentage ratio of cells in the G0G1 phase to all cells of the cell cycle in the hippocampus	$r_s = -0,90$	$p < 0,05$

SDH activity in the somatosensory cortex (day 14)	(DNA content = 2s) (day 7) integral fluorescence density of Iba+microglia on the frontal slices of CA1 hippocampal zone (day 14)	$r_s = -0,90$	$p < 0,05$
SDH activity in the somatosensory cortex (day 14)	SUB-G0G1 areas on the DNA histograms – RN1 before the G0G1 peak, which indicates cell nuclei with DNA content < 2s in the hippocampus	$r_s = -0,90$	$p < 0,05$
SOD activity in the somatosensory cortex (day 14)	number of neuron nuclei in 1 mm ² of the CA1 hippocampal zone (day 7)	$r_s = -0,90$	$p < 0,05$
SOD activity in the somatosensory cortex (day 14)	number of intact nuclei in the hippocampus (day 7)	$r_s = -0,90$	$p < 0,05$
SOD activity in the somatosensory cortex (day 14)	number of intact nuclei in the hippocampus (day 14)	$r_s = -0,90$	$p < 0,05$
SOD activity in the somatosensory cortex (day 14)	S phase of a cell cycle in the hippocampus (the percentage ratio of the DNA synthesis phase to all cells of a cell cycle (DNA content > 2s and < 4s) (day 7)	$r_s = -0,90$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	number of ambulation episodes through the peripheral squares (day 7)	$r_s = -0,76$	$p < 0,05$
Protein content in the somatosensory cortex (day 14)	latent period duration of ambulation through the peripheral squares (day 14)	$r_s = -0,89$	$p < 0,05$
NADPH oxidase activity in the somatosensory cortex (day 14)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = -0,84$	$p < 0,05$
NOS activity in the somatosensory cortex (day 14)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = -0,78$	$p < 0,05$
Lactate content in the hippocampus (day 14)	number of ambulation episodes through the peripheral squares (day 14)	$r_s = -0,84$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 14)	duration of clumping episodes (day 14)	$r_s = -0,86$	$p < 0,05$
NADPH oxidase activity in the hippocampus (day 14)	latent period duration of grooming (day 14)	$r_s = -0,86$	$p < 0,05$
NOS activity in the hippocampus (day 14)	neurological deficit according to McCrow Stroke- index scale (day 7)	$r_s = -0,78$	$p < 0,05$
Protein content in the hippocampus (day 14)	number of ambulation episodes through the peripheral squares (day 7)	$r_s = -0,76$	$p < 0,05$
Protein content in the hippocampus (day 14)	latent period duration of ambulation through the peripheral squares (day 14)	$r_s = -0,89$	$p < 0,01$