



STANFORD
SCHOOL OF MEDICINE

Title:	Hot Plate Test Validation
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Procedure	Hot Plate
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Hot Plate

The Hot Plate apparatus (IITC Inc. Model 39) is set to a temperature of $55^{\circ}\text{C} \pm 0.2$. On the testing day, mice are placed on the surface of the hot plate and covered by a glass transparent cylinder, 25cm high and 12cm diameter. A 30 second cut-off time is assigned in this protocol. A remote foot-switch pad is used to control the start/stop/reset functions. The latency to response is recorded when the first hind paw lick or jump occurs.

Project Title	Hot Plate Test Validation
Species	Mouse
Strain	C67Bl/6J
Sex	Male
Age	Unknown

Subjects		
Group	# of mice	Treatment
Vehicle	5	Saline
Buprenorphine	5	0.03mg/kg buprenorphine administered 30 minutes prior to testing via intraperitoneal injection

Hot Plate Test**Baseline**

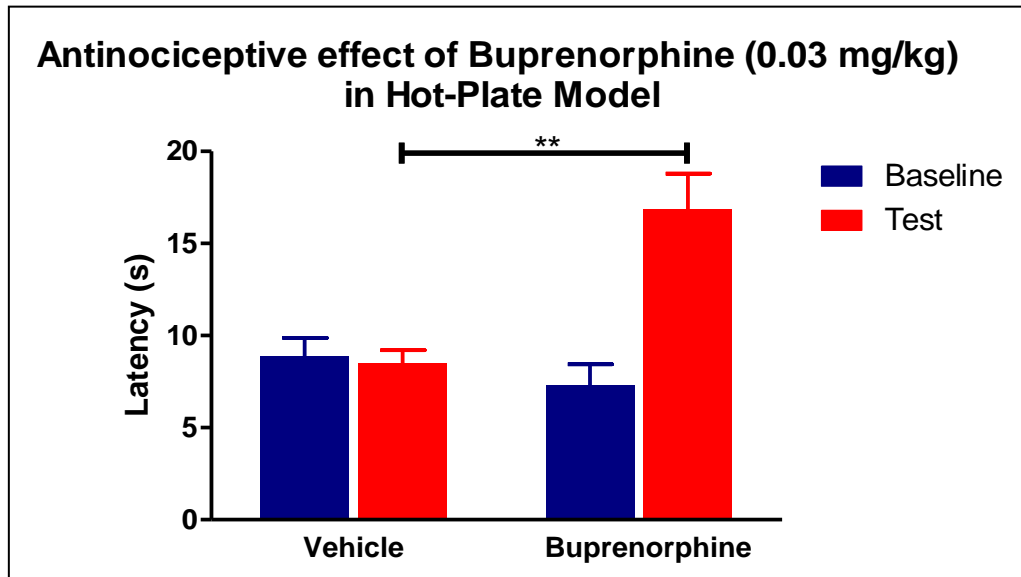
Latency to Reaction (s)

Treatment	Animal ID	Latency (s)
Vehicle	1	8.77
	2	8
	3	6.63
	4	10.96
	5	8.15
Buprenorphine	6	12.22
	7	6.57
	8	9.88
	9	7.53
	10	8.2

Testing

Latency to Reaction (s)

Treatment	Animal ID	Latency (s)
Vehicle	1	10.59
	2	5.92
	3	5.13
	4	9.56
	5	5.22
Buprenorphine	6	12.12
	7	18.84
	8	12.68
	9	12.28
	10	20.41



Data was analyzed with an unpaired t-test. Mice treated with buprenorphine were found to have significantly higher ($p < 0.01$) latencies to reaction than vehicle treated mice.

Conclusion:

Both vehicle and buprenorphine injected mice were given a baseline test to establish that they had similar sensitivities to thermal nociception prior to the drug injection. Both groups performed comparably. On testing day, half of the mice were treated with buprenorphine and the other half were given a vehicle injection. Mice treated with buprenorphine had significantly higher latencies to reaction than vehicle treated mice. This suggests that buprenorphine is capable of reducing sensitivity to thermal nociception.