

Pathway	Pathway name	DEAP	TimeClip	SPIA	TRAP	
					pORA	pPERT
hsa00140	Steroid hormone biosynthesis	-	0.005	-	-	-
hsa00330	Arginine and proline metabolism	-	0.032	-	-	-
hsa00450	Selenocompound metabolism	-	0.016	-	-	-
hsa00830	Retinol metabolism	-	0.044	-	-	-
hsa04010	MAPK signaling pathway	-	-	-	0.000	0.035
hsa04014	Ras signaling pathway	-	0.047	-	-	-
hsa04015	Rap1 signaling pathway	-	0.006	-	0.000	0.043
hsa04022	cGMP-PKG signaling pathway	-	-	-	0.000	0.000
hsa04060	Cytokine-cytokine receptor interaction	-	-	-	0.000	0.000
hsa04062	Chemokine signaling pathway	-	-	-	0.000	0.046
hsa04080	Neuroactive ligand-receptor interaction	-	0.028	-	0.000	0.005
hsa04110	Cell cycle	-	0.032	-	-	-
hsa04115	p53 signaling pathway	-	0.036	-	-	-
hsa04270	Vascular smooth muscle contraction	-	-	-	0.000	0.001
hsa04340	Hedgehog signaling pathway	-	0.039	-	-	-
hsa04350	TGF-beta signaling pathway	-	-	0.002	-	-
hsa04370	VEGF signaling pathway	-	0.010	-	-	-
hsa04512	ECM-receptor interaction	-	0.030	0.002	0.000	0.001
hsa04540	Gap junction	-	-	-	0.006	0.013
hsa04611	Platelet activation	-	-	-	0.000	0.003
hsa04622	RIG-I-like receptor signaling pathway	-	0.015	-	-	-
hsa04630	Jak-STAT signaling pathway	-	0.021	0.002	-	-
hsa04668	TNF signaling pathway	-	-	-	0.030	0.000
hsa04720	Long-term potentiation	-	-	-	0.000	0.028
hsa04721	Synaptic vesicle cycle	0.000	-	-	-	-
hsa04723	Retrograde endocannabinoid signaling	-	-	-	0.000	0.000
hsa04724	Glutamatergic synapse	-	-	-	0.000	0.047
hsa04730	Long-term depression	-	-	-	0.001	0.002
hsa04740	Olfactory transduction	-	-	-	0.000	0.000
hsa04744	Phototransduction	-	-	-	0.000	0.048
hsa04912	GnRH signaling pathway	-	-	-	0.000	0.035
hsa04960	Aldosterone-regulated sodium reabsorption	-	0.048	-	-	-
hsa04970	Salivary secretion	-	-	-	0.000	0.001
hsa04971	Gastric acid secretion	-	0.019	-	0.000	0.000
hsa05010	Alzheimer's disease	-	-	-	0.000	0.002
hsa05133	Pertussis	-	-	-	0.000	0.010
hsa05134	Legionellosis	-	-	-	0.000	0.001
hsa05140	Leishmaniasis	-	-	-	0.000	0.000
hsa05143	African trypanosomiasis	-	-	-	0.000	0.034
hsa05144	Malaria	-	-	-	0.000	0.000
hsa05146	Amoebiasis	-	-	-	0.000	0.001
hsa05215	Prostate cancer	-	-	-	0.000	0.029
hsa05222	Small cell lung cancer	-	0.046	0.002	-	-
hsa05321	Inflammatory bowel disease (IBD)	-	-	-	0.000	0.019
hsa05323	Rheumatoid arthritis	-	-	-	0.000	0.006
hsa05412	Arrhythmogenic right ventricular cardiomyopathy (ARVC)	-	0.047	-	-	-

Supplementary Table 1. Pathways detected by other representative tools and not detected by TimeTP. Pathways with p-value over 0.05 are denoted as '-'.