

TREC 2006 Genomics Track Topics

2. Information describing the role(s) of one or more genes involved in a given disease.

New ID	ID	Gene(s)	Disease	Question
	160	111 PRNP	Mad Cow Disease	What is the role of PrnP in mad cow disease?
	161	112 IDE gene	Alzheimer's Disease	What is the role of IDE in Alzheimer's disease
	162	113 MMS2	Cancer	What is the role of MMS2 in cancer?
	163	114 APC (adenomatous polyposis coli)	Colon Cancer	What is the role of APC (adenomatous polyposis coli) in colon cancer?
	164	115 Nurr-77	Parkinson's Disease	What is the role of Nurr-77 in Parkinson's disease?
	165	117 Cathepsin D gene (CTSD) and apolipoprotein E (ApoE)	Alzheimer's Disease	How do Cathepsin D (CTSD) and apolipoprotein E (ApoE) interactions contribute to Alzheimer's disease?
	166	118 Transforming growth factor-beta1 (TGF-beta1)	Cerebral Amyloid Angiopathy (CAA)	What is the role of Transforming growth factor-beta1 (TGF-beta1) in cerebral amyloid angiopathy (CAA)?

3. Information describing the role of a gene in a specific biological process.

New ID	ID	Gene	Biological Process	Question
	167	120 nucleoside diphosphate kinase (NM23)	tumor progression	How does nucleoside diphosphate kinase (NM23) contribute to tumor progression?
	168	121 BARD1	BRCA1 regulation	How does BARD1 regulate BRCA1 activity?
	169	122 APC (adenomatous polyposis coli)	actin assembly	How does APC (adenomatous polyposis coli) protein affect actin assembly
	170	123 COP2	transport of CFTR out of the endoplasmic reticulum	How does COP2 contribute to CFTR export from the endoplasmic reticulum?
	171	125 Nurr-77	preventing auto-immunity by deleting reactive T-cells before they migrate to the spleen or the lymph nodes	How does Nurr-77 delete T cells before they migrate to the spleen or lymph nodes and how does this impact autoimmunity?
	172	126 P53	apoptosis	How does p53 affect apoptosis?
	173	127 alpha7 nicotinic receptor subunit gene	ethanol metabolism	How do alpha7 nicotinic receptor subunits affect ethanol metabolism?

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4. Information describing interactions (e.g., promote, suppress, inhibit, etc.) between two or more genes in the function of an organ or in a disease.

New ID	ID	Genes	Function of organ or disease	Question
174	130	BRCA1 regulation of ubiquitin L1 and L2 in the HPV11 virus	cancer	How does BRCA1 ubiquitinating activity contribute to cancer?
175	131	CFTR and Sec61	role of L2 in the viral capsid degradation of CFTR leading to cystic fibrosis	How does L2 interact with L1 to form HPV11 viral capsids? How does Sec61-mediated CFTR degradation contribute to cystic fibrosis?
176	134	Bop and Pes	cell growth	How do Bop-Pes interactions affect cell growth?
177	135	"Insulin-like" GF and insulin receptor gene	function in skin	How do interactions between insulin-like GFs and the insulin receptor affect skin biology?
178	137	HNF4 and COUP-TF I	suppression in the function of the liver	How do interactions between HNF4 and COUP-TF1 suppress liver function?
179	138	Ret and GDNF	kidney development	How do Ret-GDNF interactions affect liver development?

5. Information describing one or more mutations of a given gene and its biological impact.

New ID	ID	Gene with mutation	Biological impact	Question
181	141	Huntingtin mutations	role in Huntington's Disease	How do mutations in the Huntingtin gene affect Huntington's disease?
182	142	Sonic hedgehog mutations	role in developmental disorders	How do mutations in Sonic Hedgehog genes affect developmental disorders?
183	143	Mutations of NM23	impact on tracheal development	How do mutations in the NM23 gene affect tracheal development?
184	144	Mutations in metazoan Pes	effect on cell growth	How do mutations in the Pes gene affect cell growth?
185	145	Mutations of hypocretin receptor 2	narcolepsy	How do mutations in the hypocretin receptor 2 gene affect narcolepsy?
186	146	Mutations of presenilin-1 gene	biological impact in Alzheimer's disease	How do mutations in the Presenilin-1 gene affect Alzheimer's disease?
187	148	Mutation of familial hemiplegic migraine type 1 (FHM1)	neuronal Ca <sup>2+</sup> influx in hippocampal neurons	How do mutations in familial hemiplegic migraine type 1 (FHM1) gene affect calcium ion influx in hippocampal neurons?