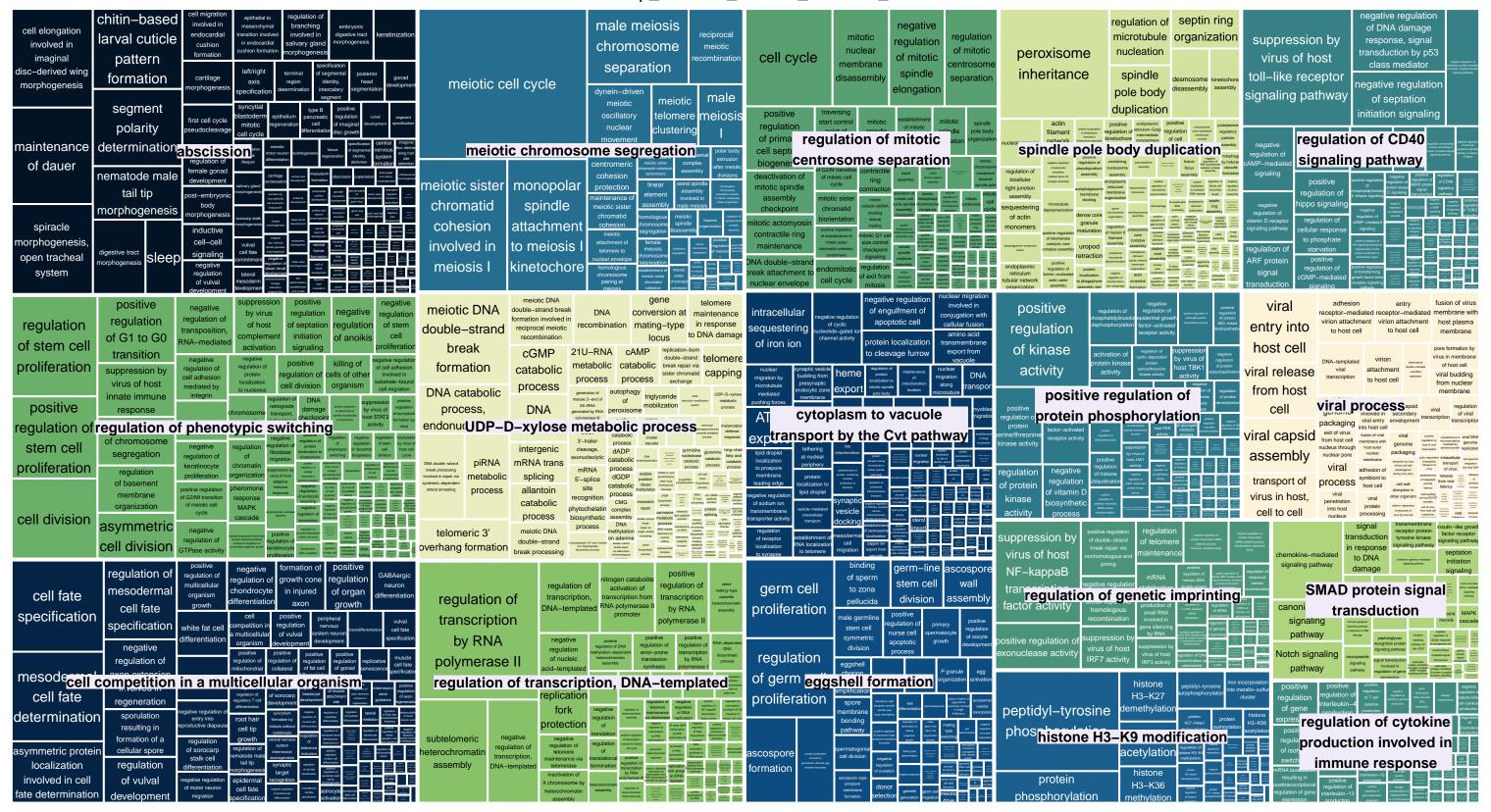
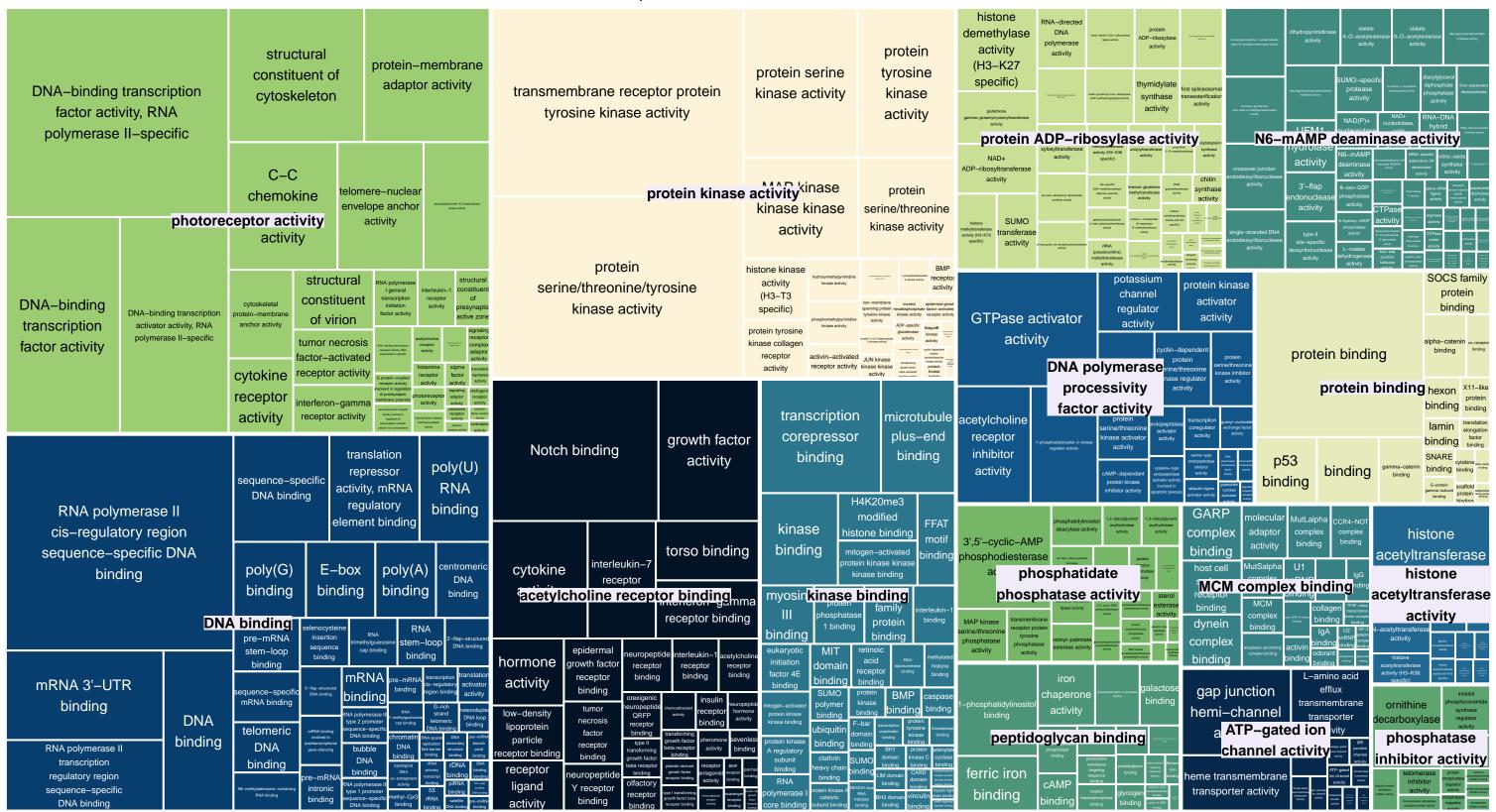
Supplementary Material 2. Enrichments Gene Repertoire Evolution. Treemaps showing enriched GO terms (BP: Biological Processes, MF: Molecular Functions, CC: Cellular Components) in HOGs arisen in Tricladida (node 65), Continenticola (node64), Geoplanoidea (node 63), and Geoplaniidae (node 62)

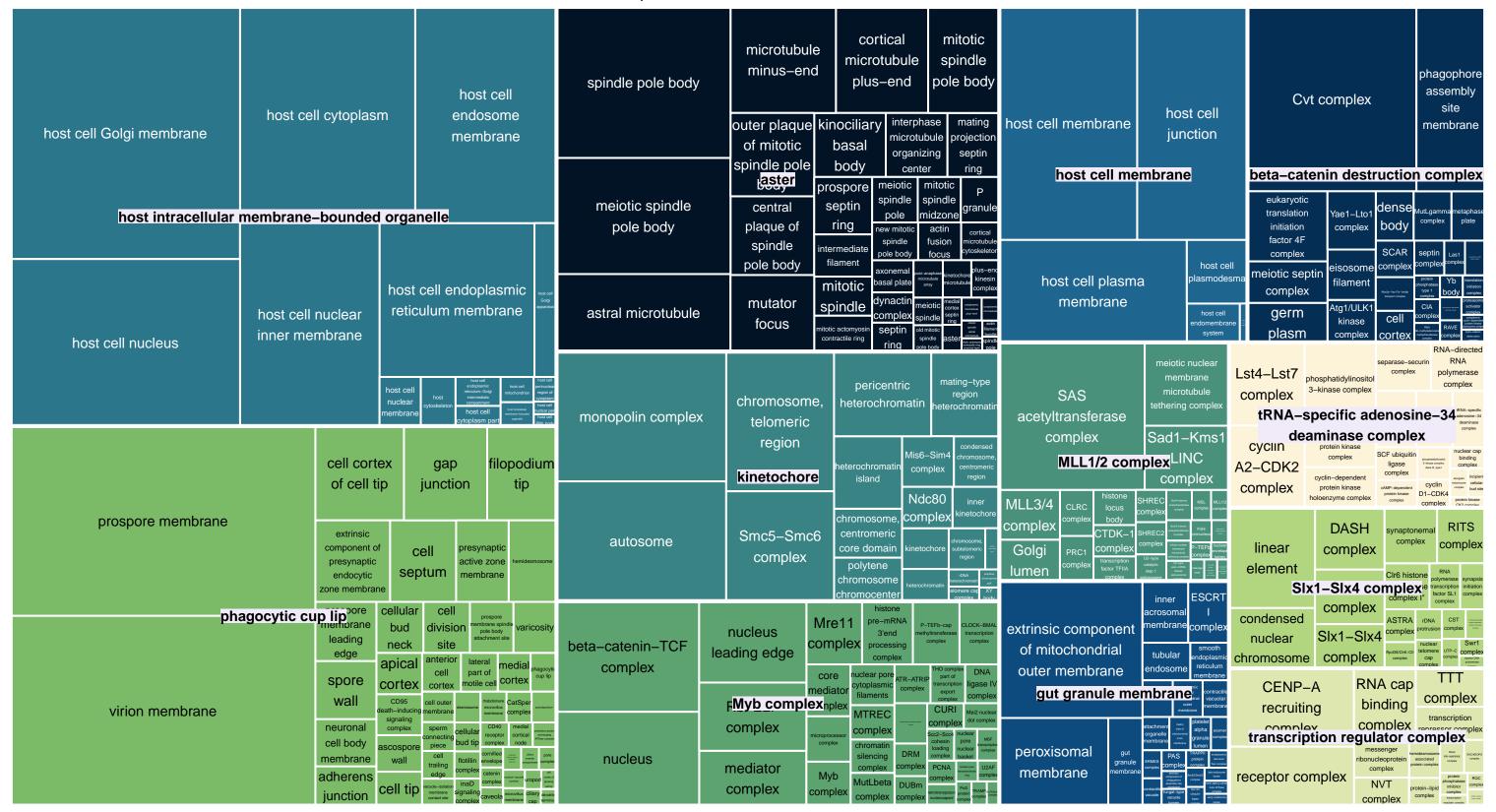
TreeMap_Enrichm_node65_GAINED_BP



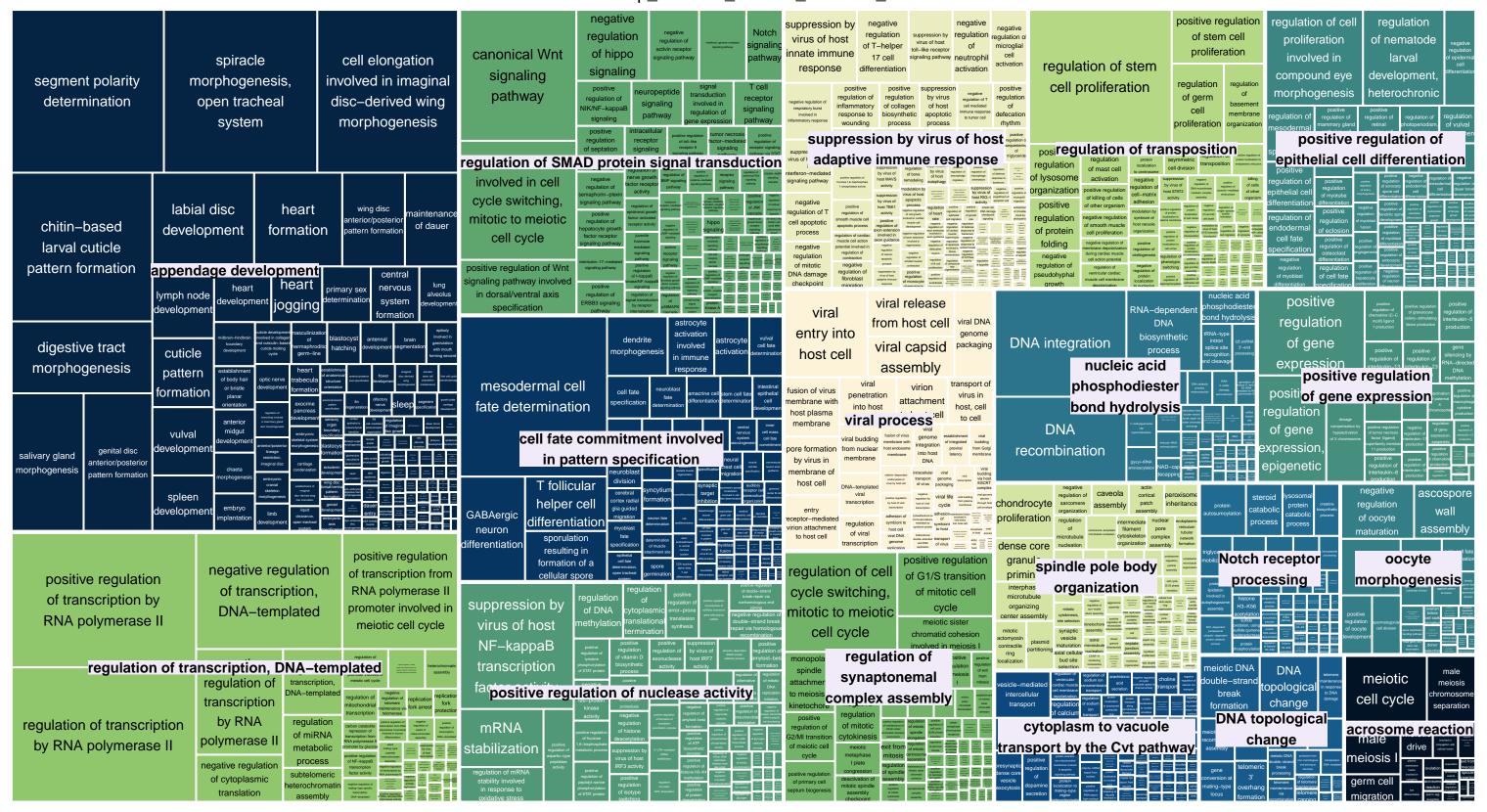
TreeMap_Enrichm_node65_GAINED_MF



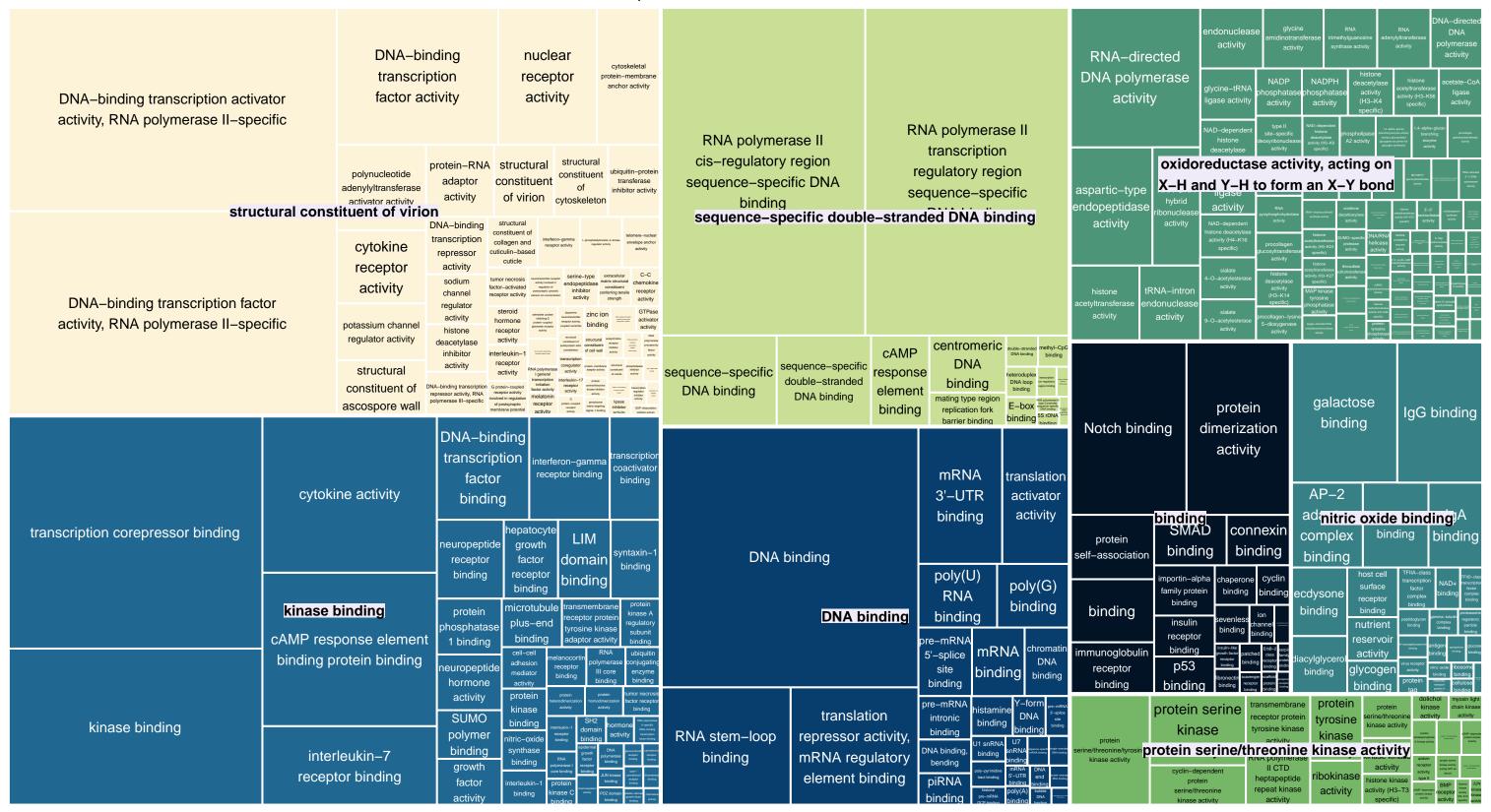
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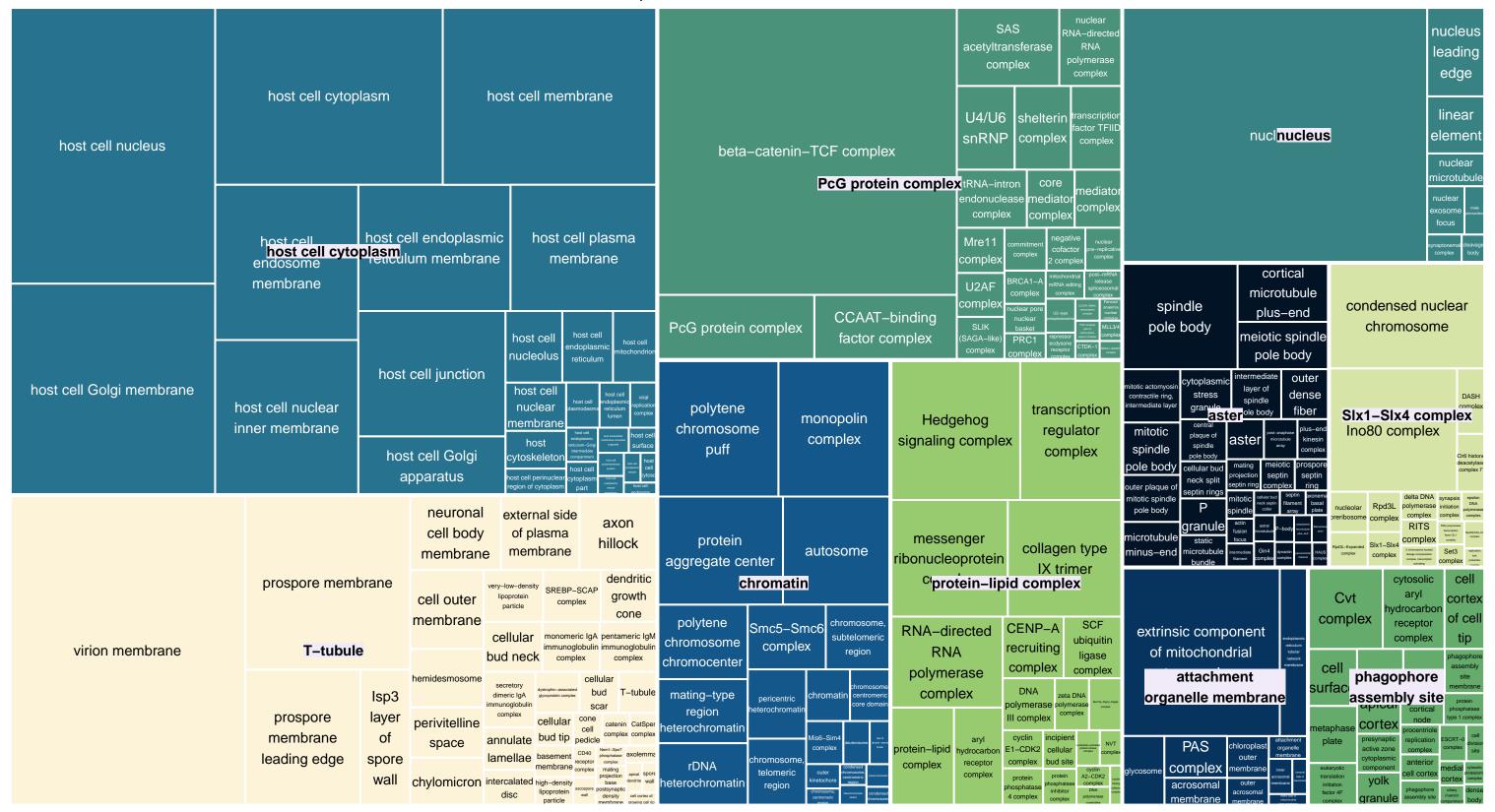
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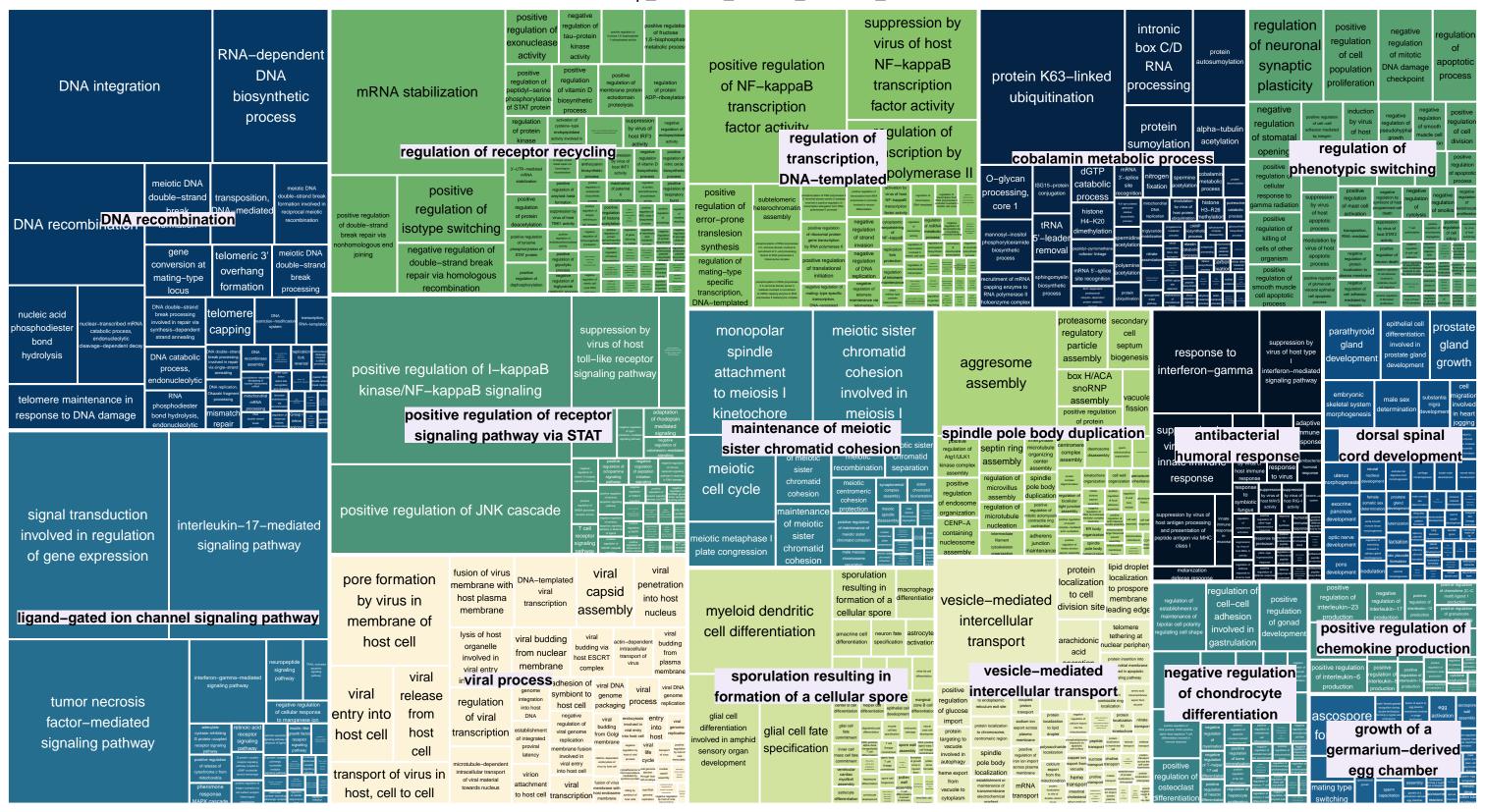
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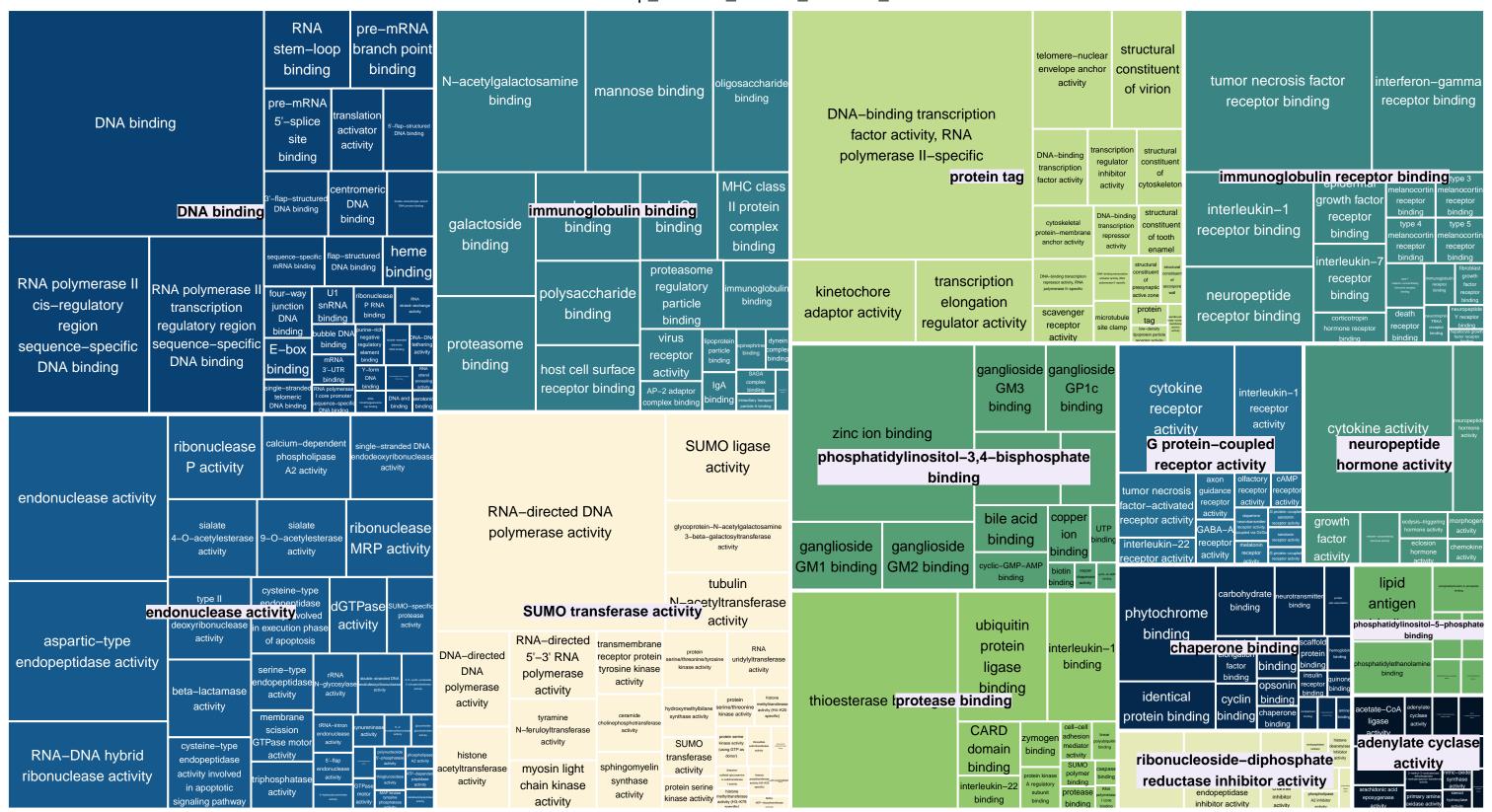
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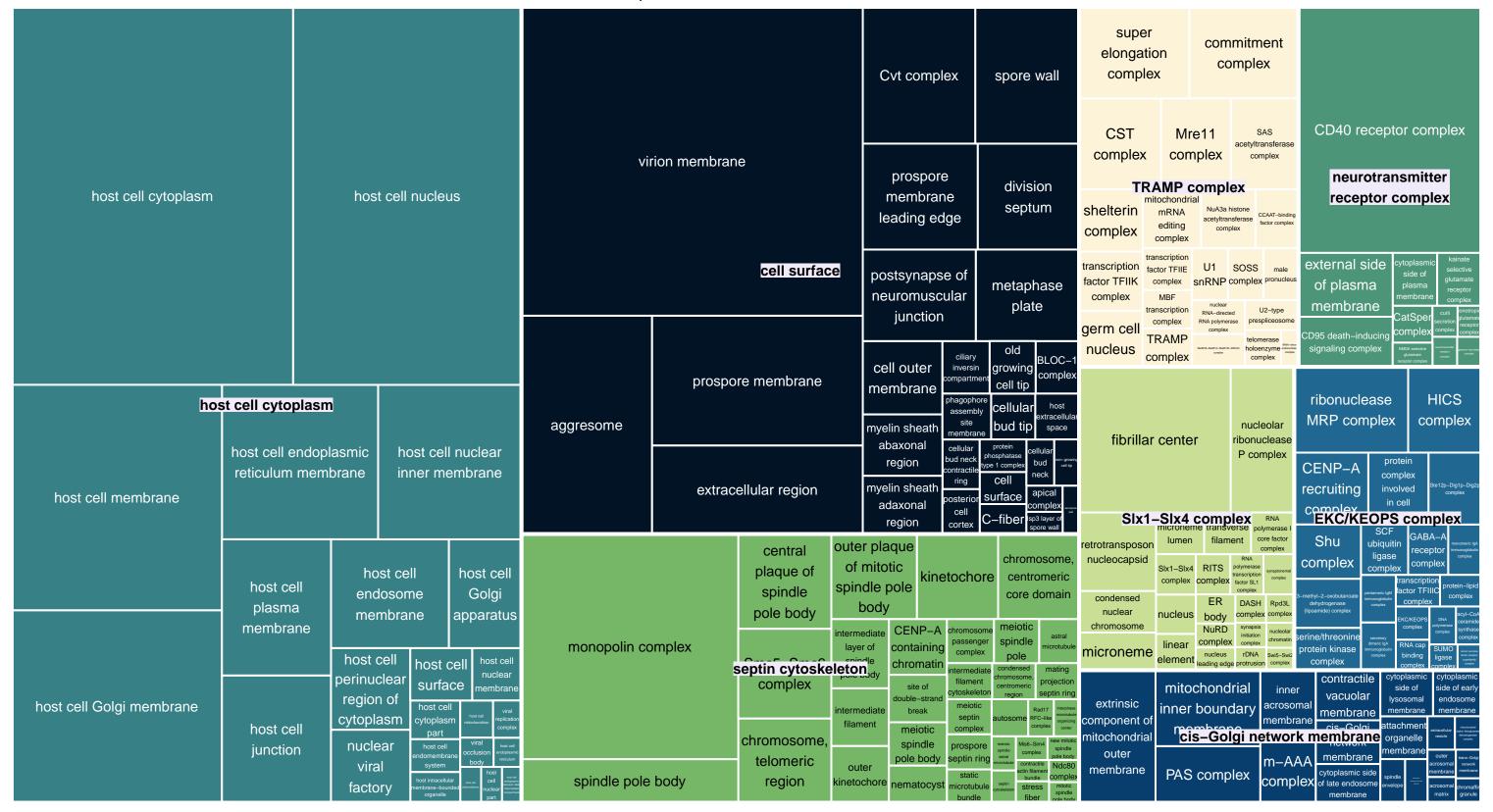
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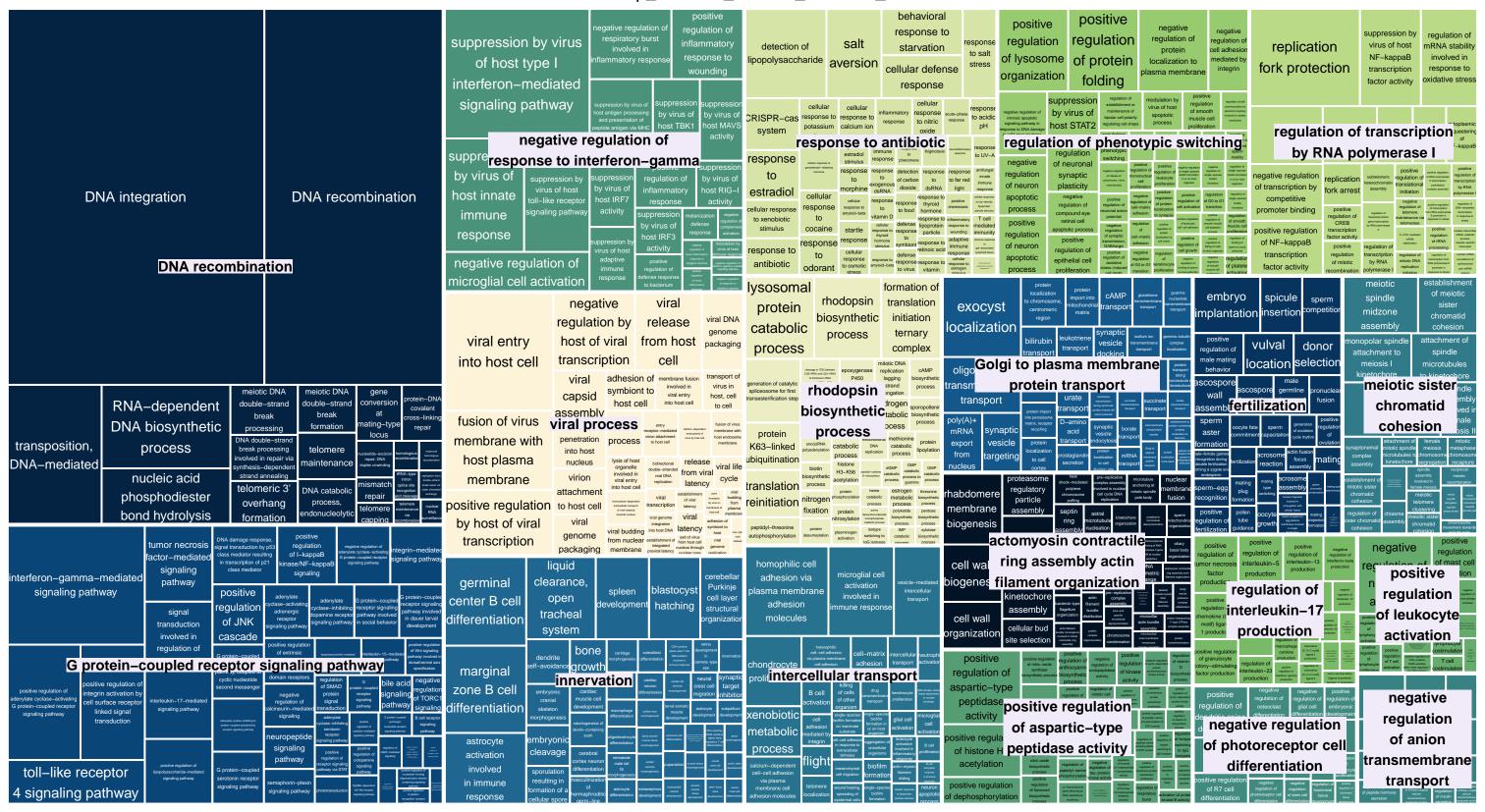
TreeMap_Enrichm_node63_GAINED_MF



TreeMap_Enrichm_node63_GAINED_CC



TreeMap_Enrichm_node62_GAINED_BP



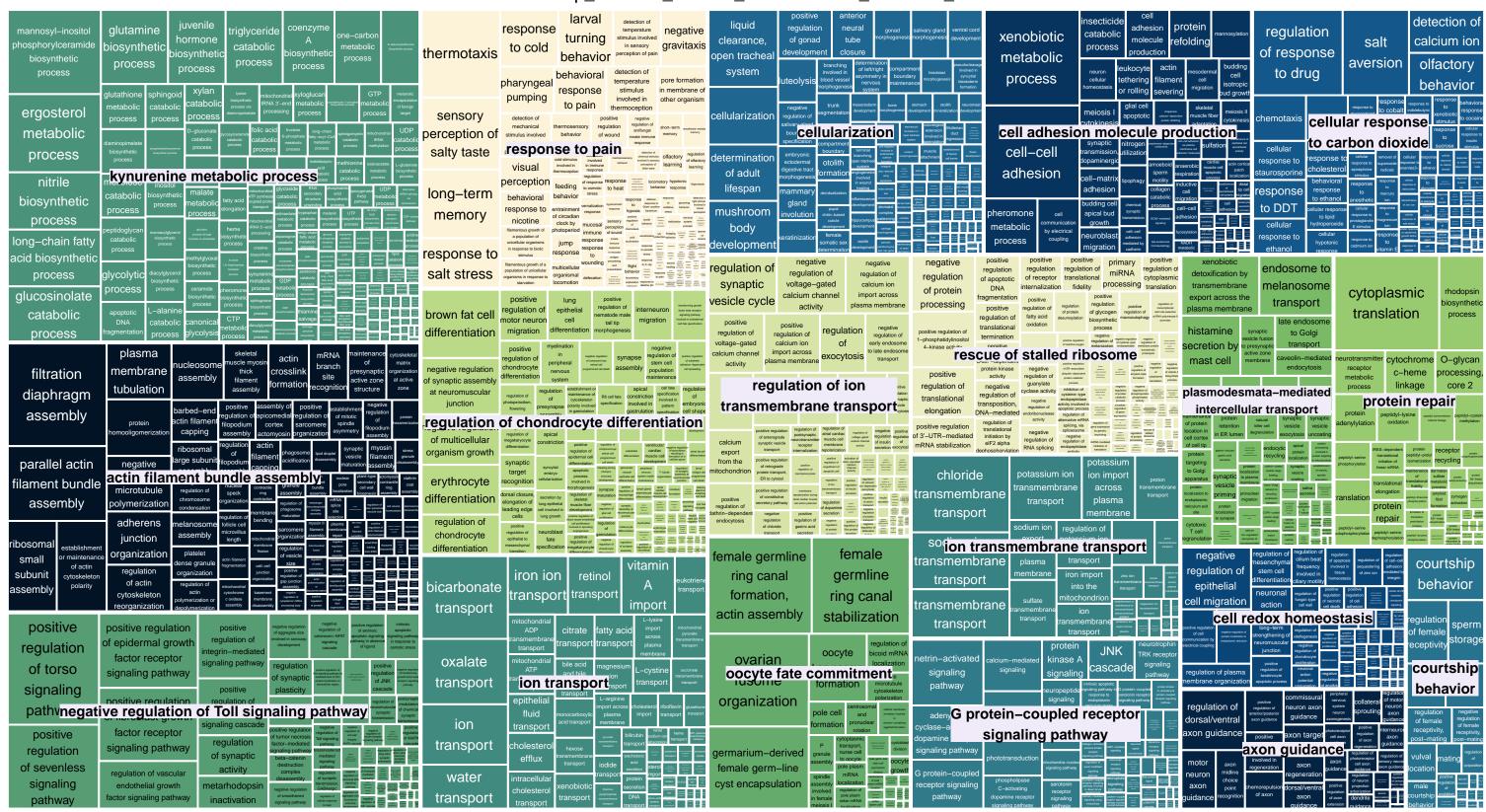
TreeMap_Enrichm_node62_GAINED_MF

galactoside binding	acyl binding	retinol bind	retinol binding lipopolysaccharide binding		phytochrome binding	integrin binding factor		r necrosis r receptor inding	interleukin–1 binding	cytokine receptor activity	G protein–coupled receptor activity	G protein–coupled serotonin receptor activity
acyl carrier activity	N–acetylgalactosa <mark>exo</mark> binding	oligosaccharide binding genous prote structural constituent	in binding potassium	cornection releasing	thioesterase binding ph	receptor binding osphatidylinosi chaperone	receptor binding translation	receptor binding semaphorin or e binding	binding omplement component 3b binding type II transforming growth factor beta receptor binding	lipopolysaccharide interleukin-	neurotransmitter receptor activity, coupled via Gi/Go pled receptor act histamine receptor act receptor activity	opeptide melatonin coreceptor receptor activity activity
host cell surface receptor binding	retinal binding	of virion mannose binding	proteasome regulatory particle binding anti-sigma factor antagonist activity sinding protessome language site and site activity sinding site activity site activit	ation neuropeptide lador vity la lador lador vity la lador l	cell–cell adhesion mediator activity Toll–like receptor	corticotropin hormone receptor binding type 1	binding cadherin binding protein self-association	tropomyosin binding liga- bind pheromone activity phosphatic 3-kinase	ein cannabinoid receptor binding receptor activity	Olidopentide I -	peptide receptor activity pheromone receptor activity nd-gated	pancreatic polypeptide proceptor activity receptor activity vasopressin
endonuclease ac	4–O–ace	alate etylesterase ctivity	tyrosine kinase activity metalloendopeptidase activity myosin light aspa chain kinase endogenerical	yruvate kinase activity rtic-type peptidase ctivity type II site-specific deoxyribonuclease activity	4 binding	melanocortin receptor binding	hemoglobin binding	identical protein binding	RNA strand	secondary active transmembrane	Of tel	activity
RNA-directed D	9-O-ace ac	5'-hydroxyl-kinase		ABC-type double-stranded DNA helicase activity polymerase II CTD Japeppile activity activity DNA topiciormerase activity DNA topiciormerase activity DNA topiciormerase activity ATP-Judisyzerja activity RNA RNA N-glycosylase activity SUMO ligase activity	DN	IA binding <mark>melato</mark> n	A binding <mark>melatonin binding</mark>		romeric DNA nding binding	glutathione transmembrane transporter activity ABC-type bile acid transporter activity prostaglandin transmembrane transporter activity	P—type calcium transporter activity conductors of the conductors o	eclosion hormone activity chemorepellent activity
polymerase activ	constituent of activity ascospore wall		activity ATP-dependent end of the microtubule motor activity, minus-end-directed activity, minus-end-directed activity mistone accept/transferase activity mistone activity mistone activity mistone activity (M3-X56 activity) activity (M3-	temesoic acid O-metrythranderses activity totochore alpha-amytase activity activity activity activity activity activity	single-stranded	d telomeric DNA binding		DNA binding Y-form ser	ATP rotonin binding adenyl ribonucleotide binding	steroid hydroxylase activity department of the steroid activity ac	protylycerate acid epoxygenase activity genase activity cyclopenase activity boxygenase 2-dehydrogenase dehydrogenase dehydro	ylulose Lottase Itivity drolipoyl rogenase activity acting on a activity energy or activity acting on a activity activity acting on a activity acting on a activity acting on a activity acting on a activity activ

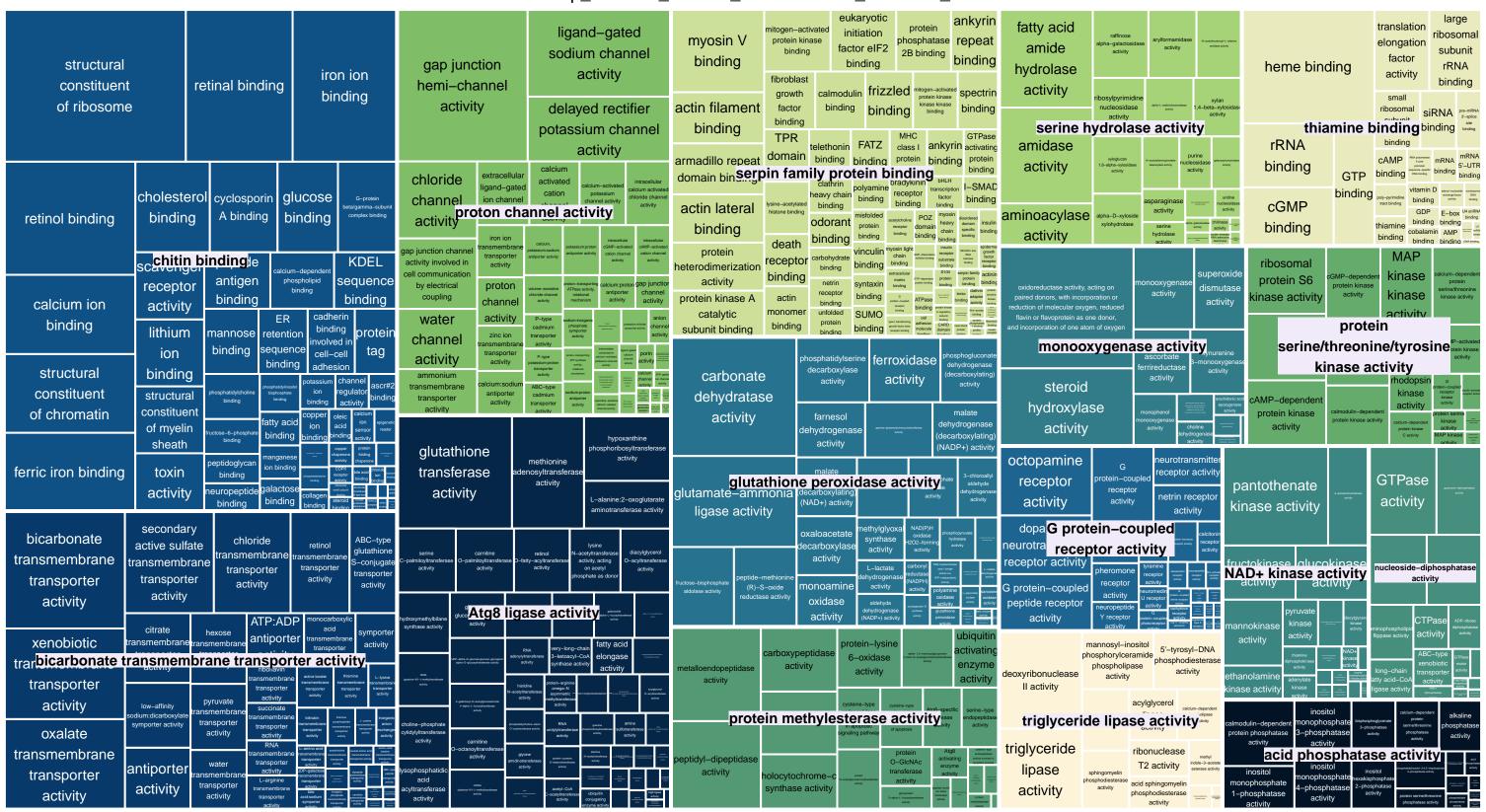
TreeMap_Enrichm_node62_GAINED_CC

	host call ov	host cell cytoplasm		Smc5-Smc6 complex	meiotic spindle midzone	Mis6-Sim4 complex	mitotic spindle pole body	monopolin complex	replicati fork prote comple	ction	ochondrial mRNA editing complex	DNA helicase A complex
host cell nucleus	Host cell cy			Ndc80 complex	kinetochore	filament array	st-anaphase polyten microtubule chromoso array band	complex	Mre11 complex	U2-type catalytic step 1 spliceosome	nuclear pore cytoplasmic filaments	synaptonemal complex
host c	ell endosome membrane	host cell nuclear	host cell Golgi		post-anaphas outer kinetochore	e microtubu myosin thick filament	ole body plus-e	ule	MutLalpha complex	nucl microneme		CURI
	host cell Golgi membrane	host cell	apparatus host cell	chromosome, telomeric region	spindle pole body	spindle finite spindle pl	ermediate intermediate m filament cytoskeleton o cortical	crotubule cortical ganizing microtubule center meiotic actin	UTP-C complex	complex	complex end c	nucleus omplex nucleus leading edge
host cell membrane		endoplasmic endo reticulum membrane	bsome membrane host cell	cytoplasmic stress granule	kinetochore microtubule	mitotic o	omplex ondensed omosome, astral microtubule region	spindle fusion focus troponin cortical microtubule cytoskeleton	nucleus	focus	release spliceosomal complex factorial	ctor TFIIH o complex d1–Kms1 LINC complex
	host cell plasma membrane	host cell	part membrane host cell nuclear nuclear		_		olysaccharide ptor complex	catenin com	integ	rin dens	ıronal 👸	gamma dense DNA core lymerase omplex granule
virion membrane	zonula adherens	ternal side of plasma nembrane	I spore wall	viral envelope	T=1 icosah viral ca	edral edral		eptor comple potassium channel	kainate seler	eptor plastid triylakold g		iplex atelet GARP complex anule
	cell surface p	f apical division blasma septum	ae of collagen and cuticulin-based intercellular cuticle xtracellular matrix canaliculus	viral ca			40 receptor complex	complex CatSper complex	G protein-coupled receptor heterodimeric	thylakoid membrane spin-arcular last all advanced and complex recept	granule mitor membrane membrane protei	ex kinase
extracellular region	Cell Sulface	embrane mating ellular projection base	centriole density membrane	viral nucleocapsid ^{ico}		rion ponent		evocvet	TSC1-TSC2 F complex cc	Δ / / Γ	in ce	ramide
extracellular region		nyosin base postsynaptic membrane	space coat		sahedral viral tegument	elical viral apsid	lammasome RAVE complex	proteasome regulatory particle, base subcomplex	preinitiation prein	48S IVIVV	compl NLS-depe	complex endent Rix1

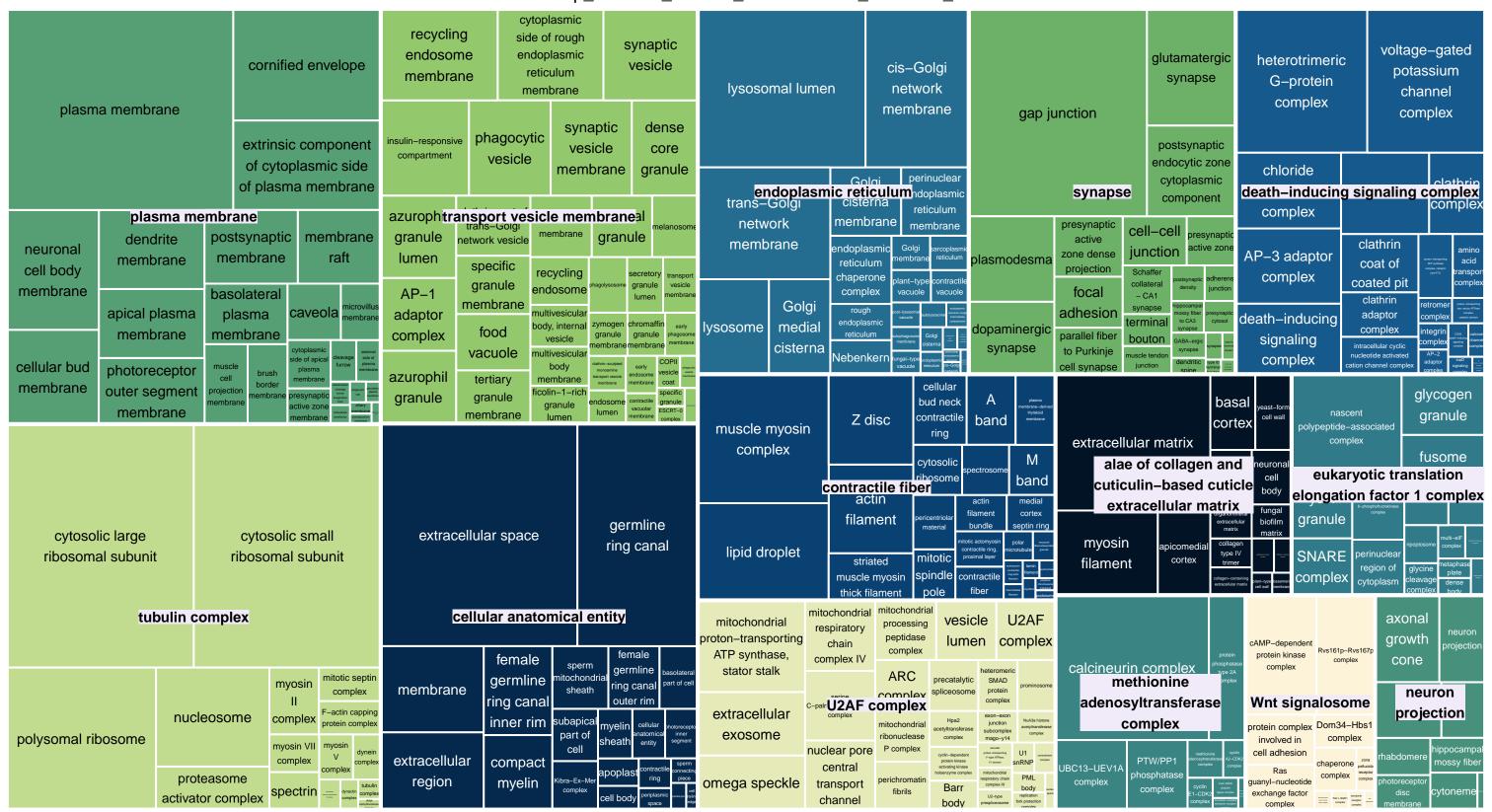
TreeMap_Enrichm_node62_DUPLICATED_balanced_BP



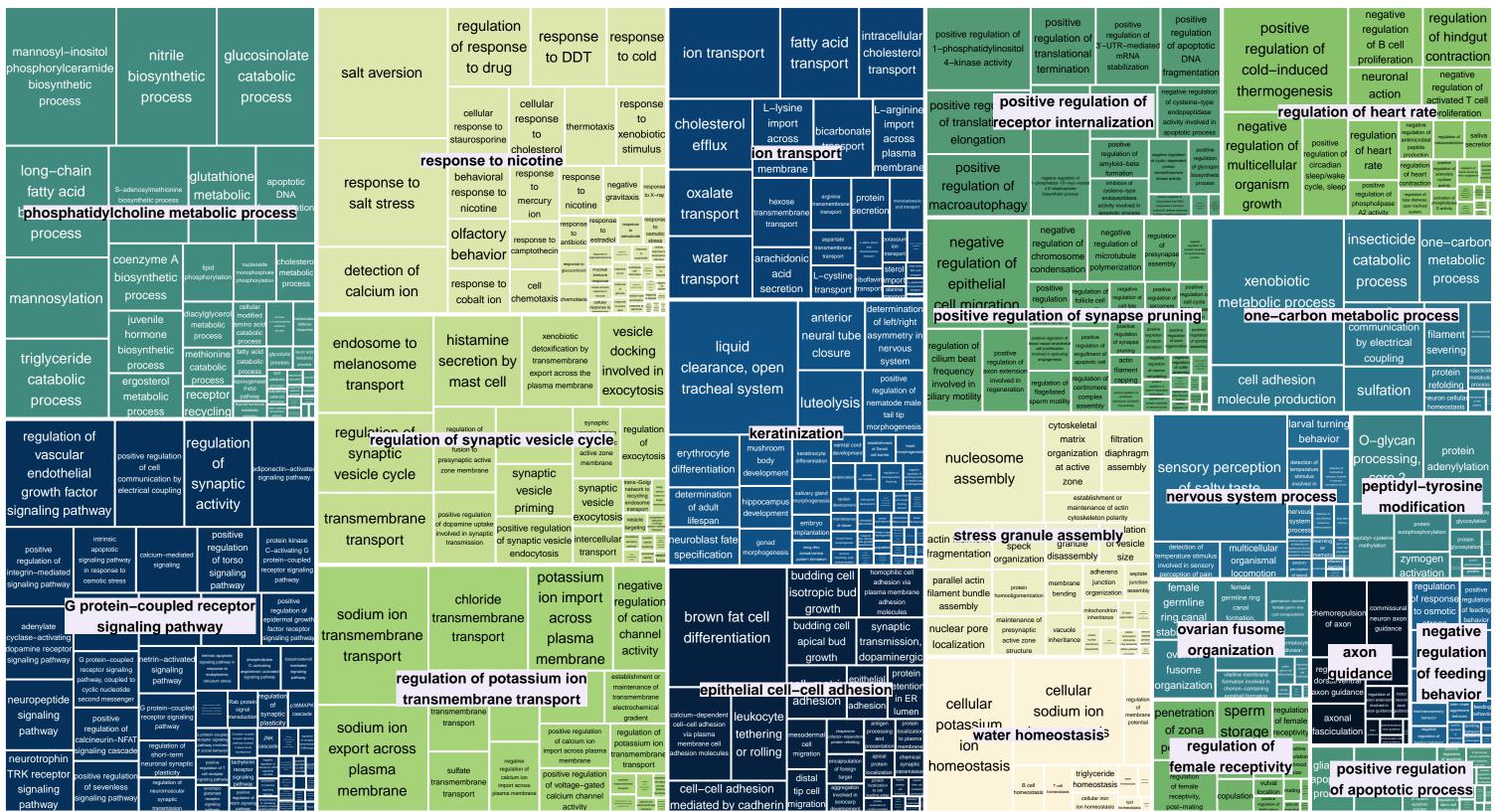
TreeMap_Enrichm_node62_DUPLICATED_balanced_MF



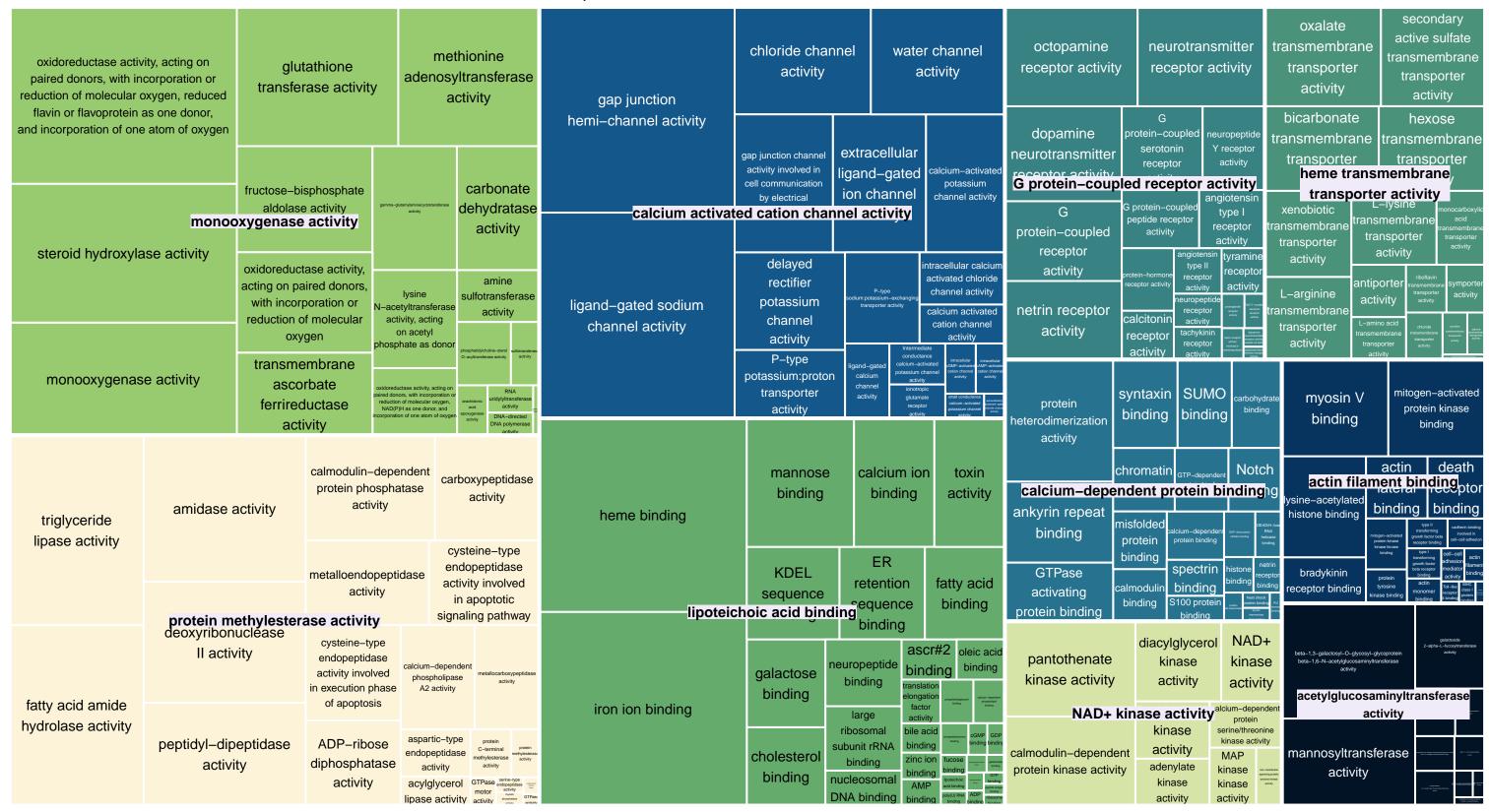
TreeMap_Enrichm_node62_DUPLICATED_balanced_CC



TreeMap_Enrichm_node62_EXPANDED_balanced_BP



TreeMap_Enrichm_node62_EXPANDED_balanced_MF



TreeMap_Enrichm_node62_EXPANDED_balanced_CC

