

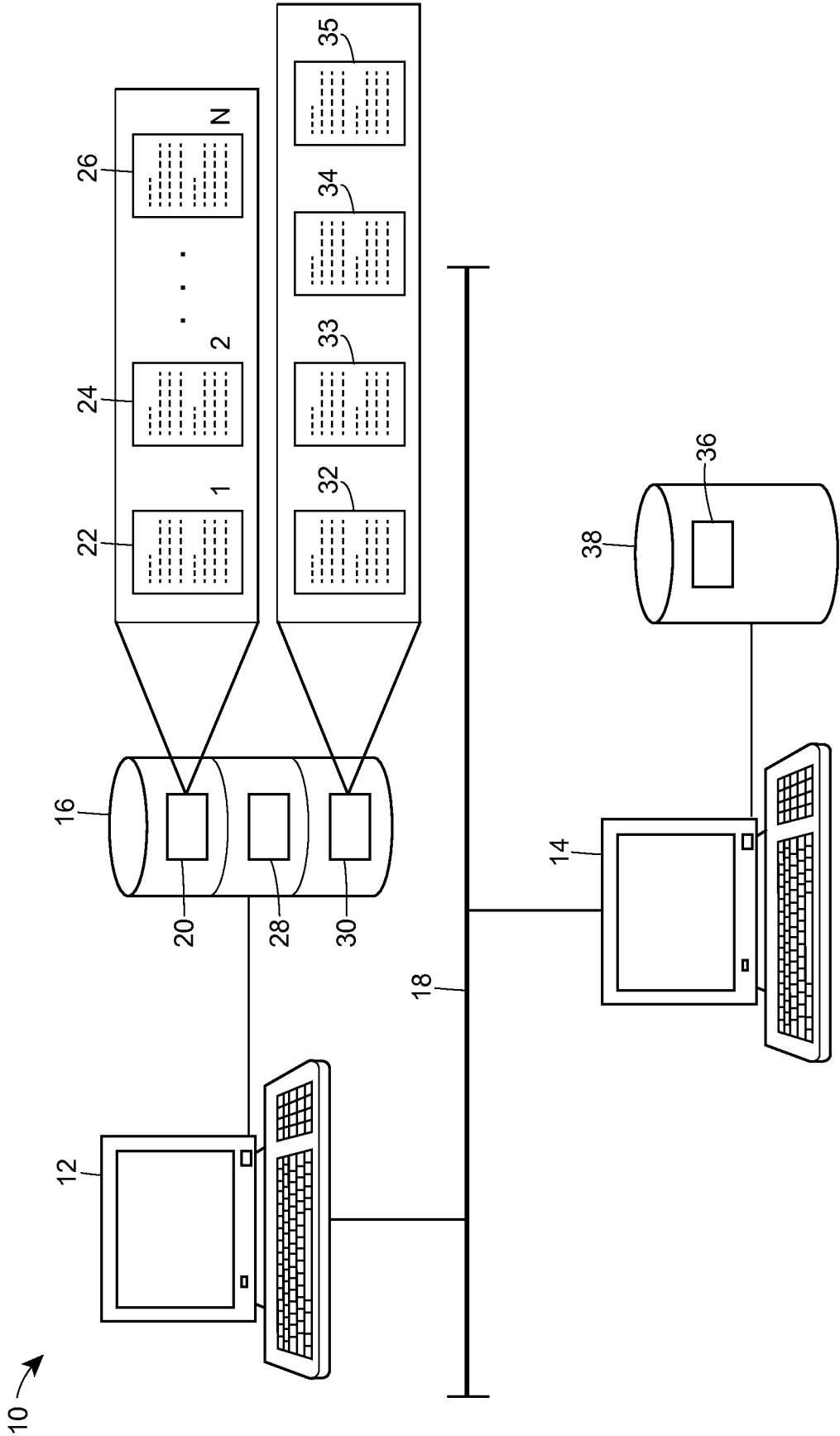
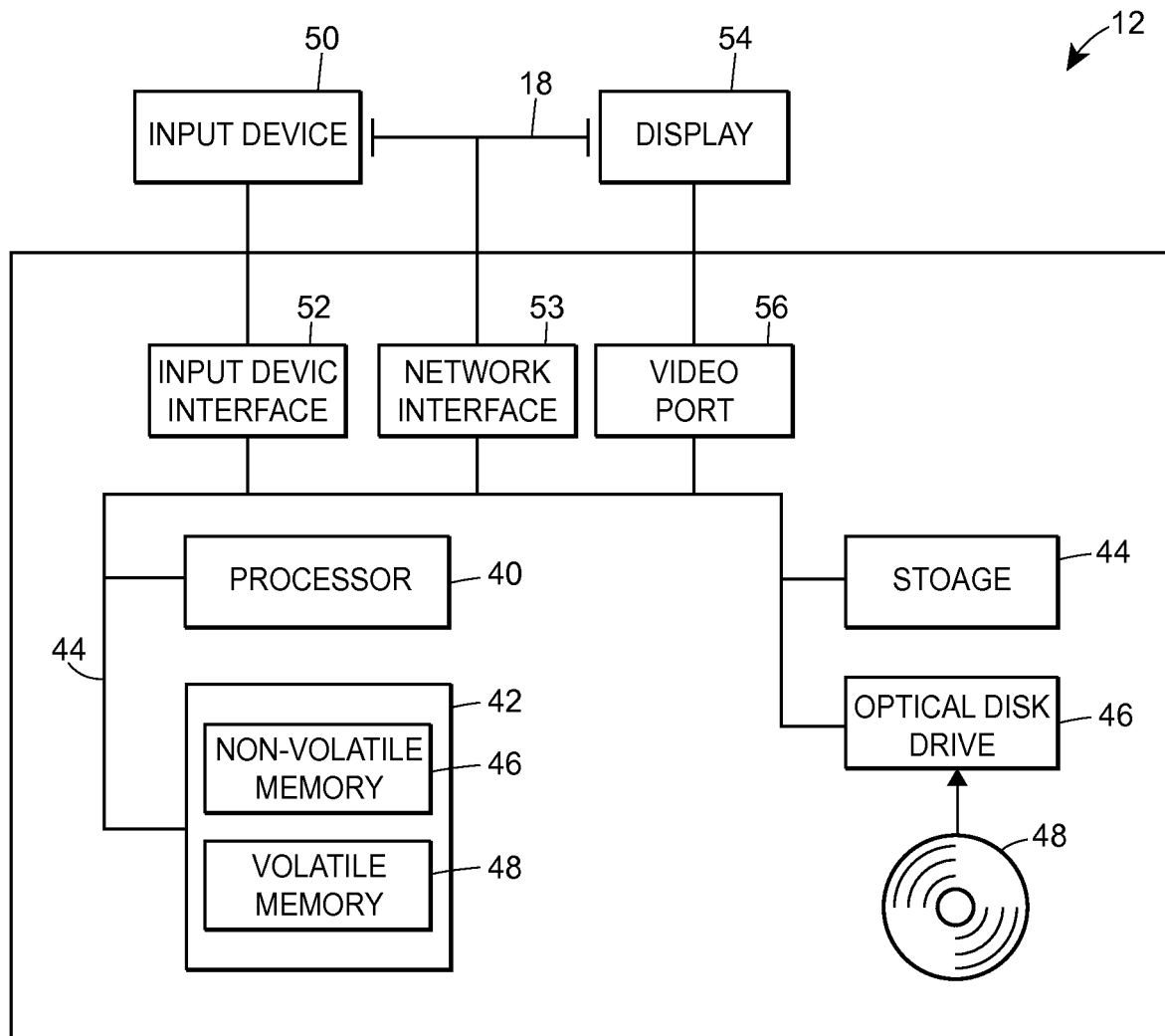


FIG. 1

**FIG. 2**

Heat-Map of log2 fold changes of Old/Young and Promatrixyl 3ppm on fibroblast

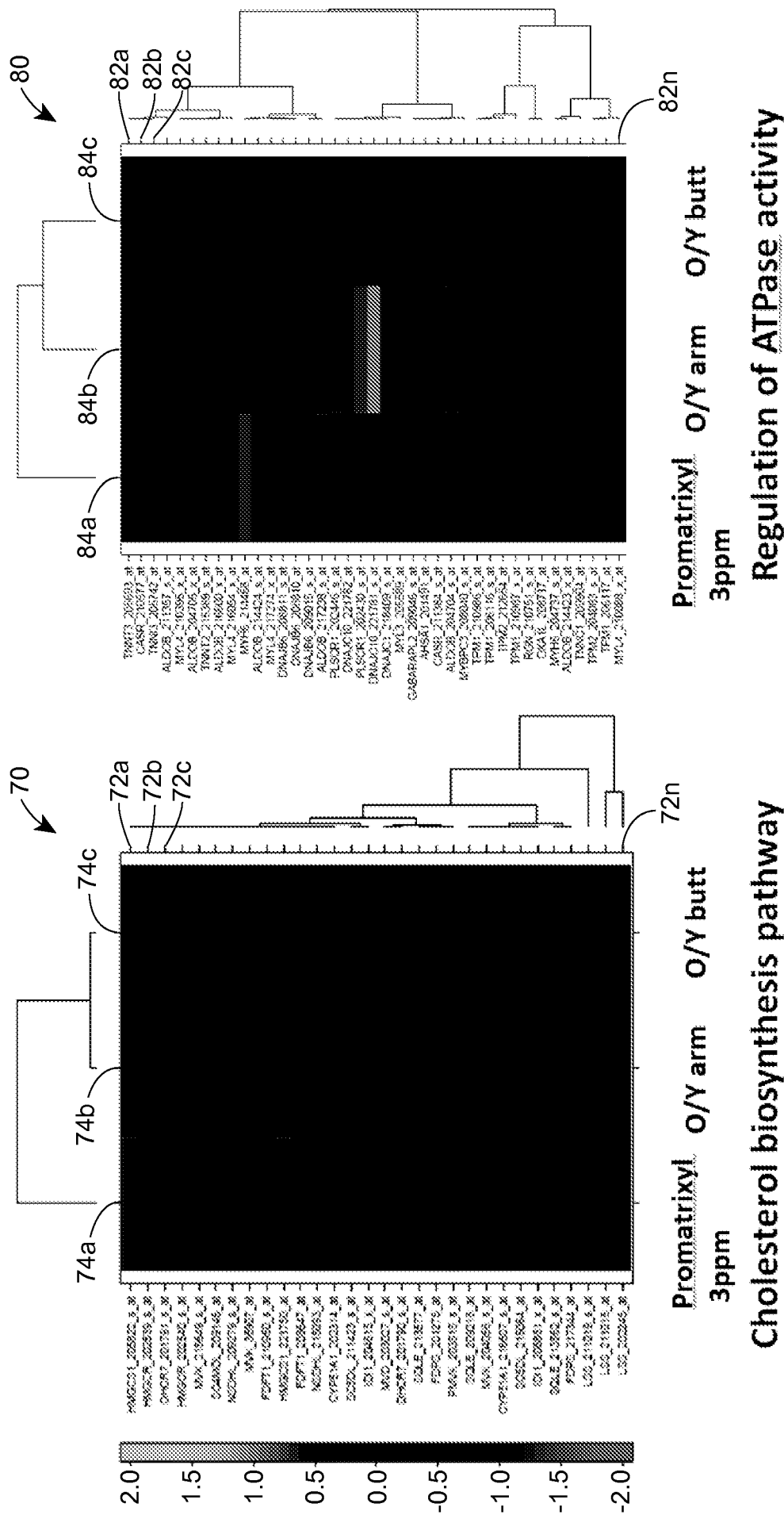
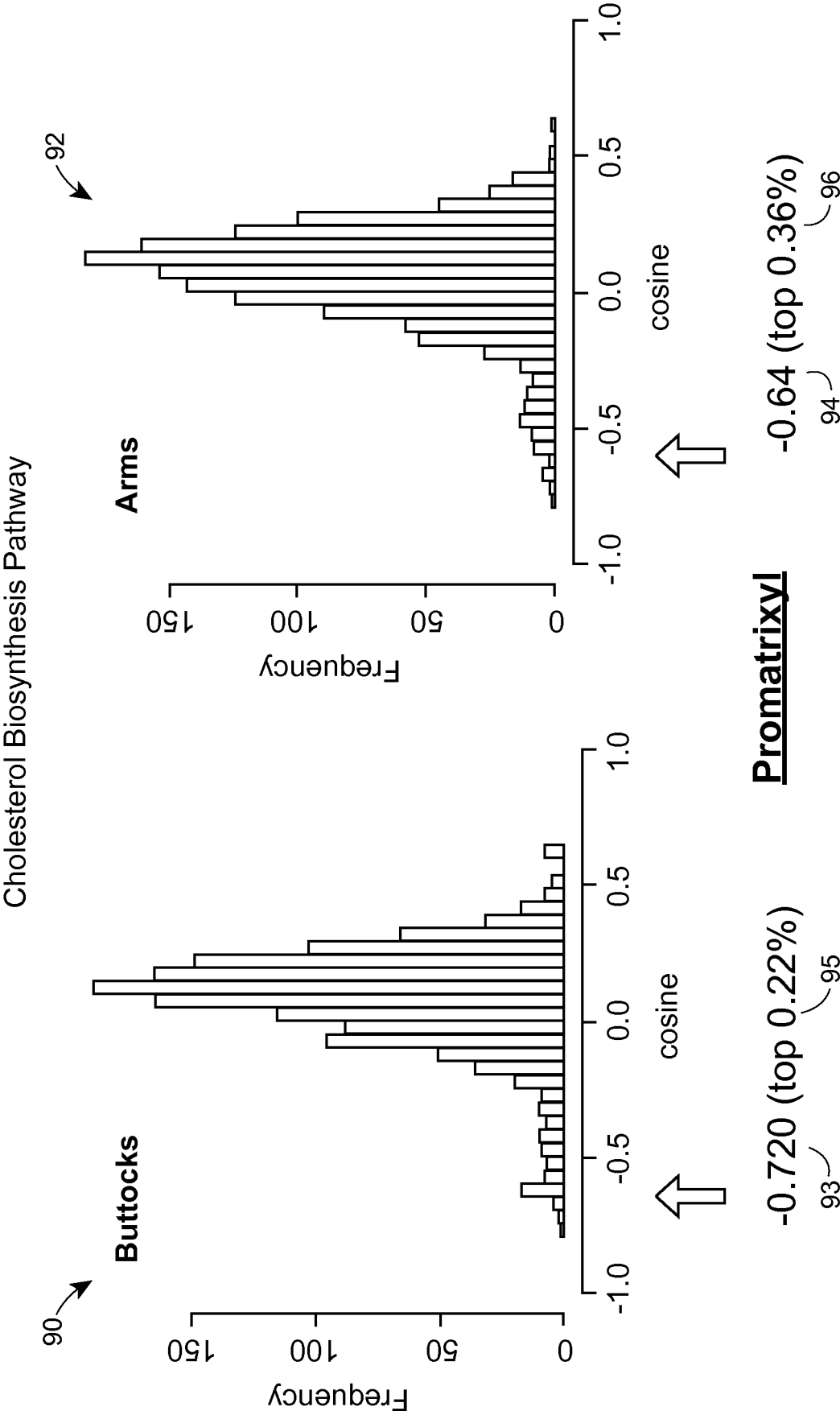
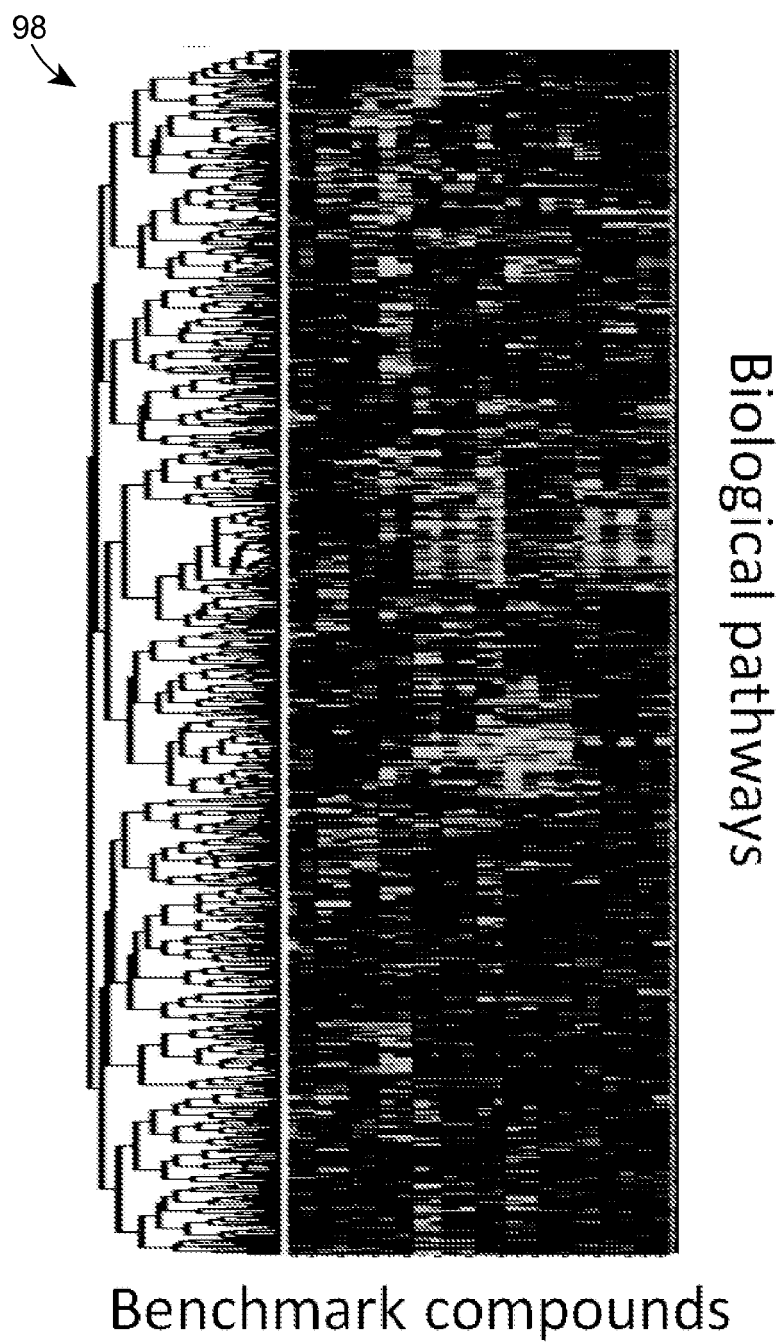


FIG. 3



Promatrixyl

FIG. 4

**FIG. 5**

Connections in Cholesterol Metabolism (fibroblast)

Biological Processes from Gene Ontology	Promatrixyl 3ppm A	Olivem 460 DKFZ dermis 26 d B	Olivem 460 0.01% BJ fibroblasts C	Niacinamide 100 uM D	Niacinamide 3.5% E
cholesterol biosynthetic process	0.2%	7.9%	0.6%	9.99%	10.5%
steroid metabolic process	0.0%	79.6%	1.9%	98.9%	4.7%
cholesterol homeostasis	0.1%	78.7%	0.1%	98.0%	5.9%
cholesterol transport	1.2%	13.9%	4.0%	33.9%	15.0%
intestinal cholesterol absorption	0.5%	1.6%	2.7%	75.9%	12.0%
low density lipoprotein particle clearance	1.2%	16.5%	0.8%	83.9%	46.6%
fatty acid biosynthetic process	0.2%	31.9%	0.3%	9.99%	21.4%
fatty acid catabolic process	0.1%	60.9%	87.6%	71.2%	78.8%

FIG. 6

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Connections in ATPases (fibroblast)

Biological Processes from Gene Ontology	Promatrixyl 3ppm A	Olivem 460 DKFZ dermis 26 d B	Olivem 460 0.01% BJ fibroblasts C	Niacinamide 100 uM D	Niacinamide 3.5% E
ATP biosynthetic process 120a	52.7%	90.2%	52.8%	86.6%	44.2%
ATP hydrolysis coupled proton transport 120b	42.8%	65.0%	5.0%	76.6%	24.8%
ATP synthesis coupled electron transport	75.3%	62.1%	37.4%	95.0%	12.4%
ATP synthesis coupled proton transport	99.9%	68.2%	53.6	95.5%	15.5%
ATP transport	17.5%	68.6%	99.1%	87.0%	54.2%
Cellular response to ATP	45.1%	70.2%	93.0%	47.2%	27.1%
Nicotinamide nucleotide metabolic process	5.7%	64.8%	3.4%	99.9%	3.4%
Peroxisome organization	50.7%	23.4%	6.3%	66.8%	12.4%
Regulation ATPase activity	59.7%	95.8%	86.6%	11.9%	89.1%
Vitamin Biosynthtic process 120j	73.3%	94.5%	12.9%	78.8%	52.7%

FIG. 7

Connections in Innate and Adaptive Immunity (fibroblast)

Biological Processes from Gene Ontology	A B C D E				
	Promatrixyl 3ppm	Olivem 460 DKFZ dermis 26 d	Olivem 460 0.01% BJ fibroblasts	Niacinamide 100 uM	Niacinamide 3.5%
Acute inflammatory response	36.5%	95.0%	60.5%	84.0%	0.6%
Adaptive Immune Response	99.9%	16.2%	99.9%	0.0%	91.9%
Chronic inflammatory response	71.7%	95.0%	59.7%	54.9%	0.1%
Inflammatory response	18.3%	99.9%	35.5%	58.0%	0.0%
Innate Immune Response	97.5%	68.5%	68.8%	0.4%	66.6%
Regulation of adaptive immune response	98.6%	73.8%	99.3%	0.6%	64.5%
Regulation of innate immune response	98.0%	30.7%	56.5%	56.6%	35.4%
Toll like receptor signaling	74.6%	86.5%	81.6%	98.1%	4.2%

FIG. 8

	Promatrixyl	Olivem 460	Niacinamide
Cholesterol Metabolism	Yes	Yes	Not sure
ATPases	Not sure	Weakly	Not sure
Innate and Adaptive Immunity	Not sure	Not sure	Yes

FIG. 9

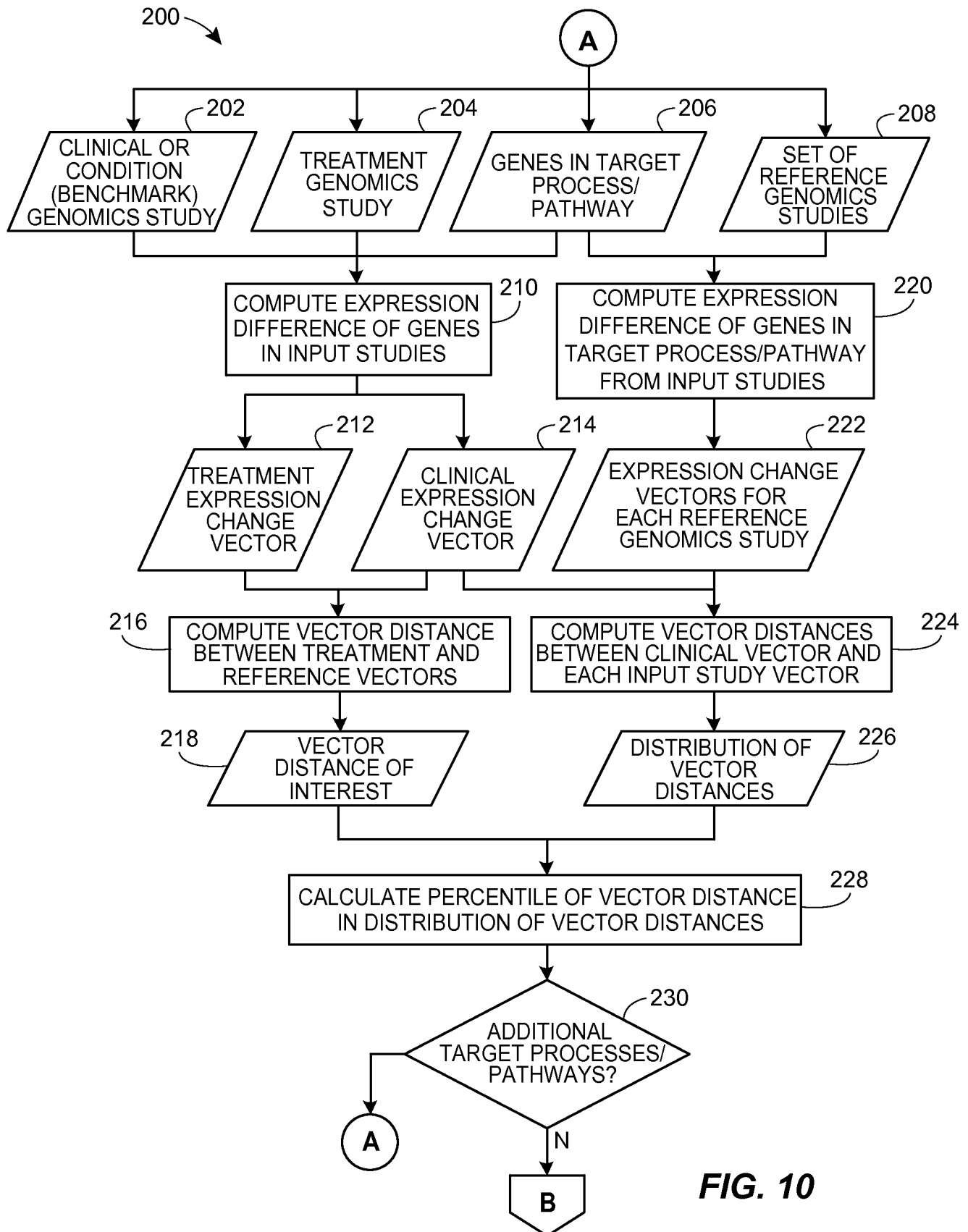
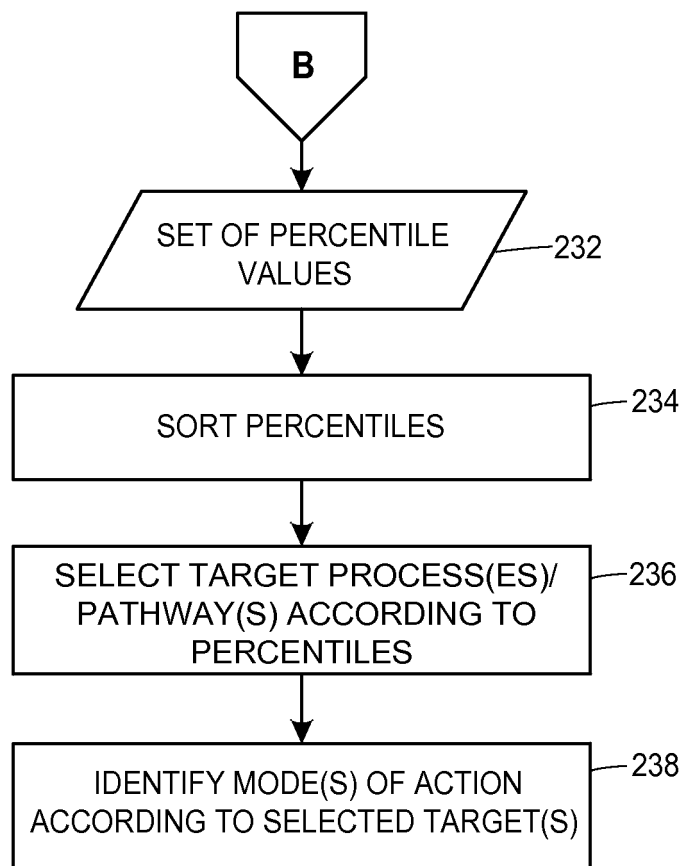


FIG. 10

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**FIG. 11**