

FIG. 1

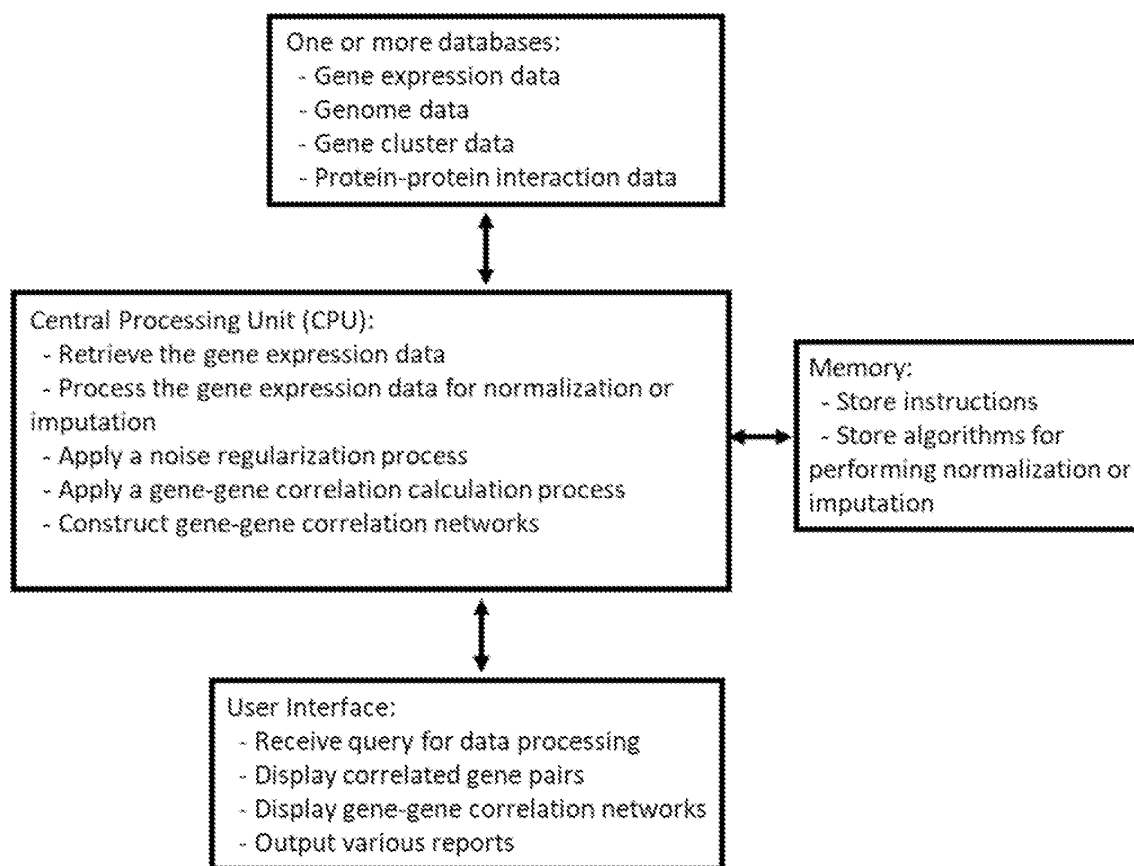
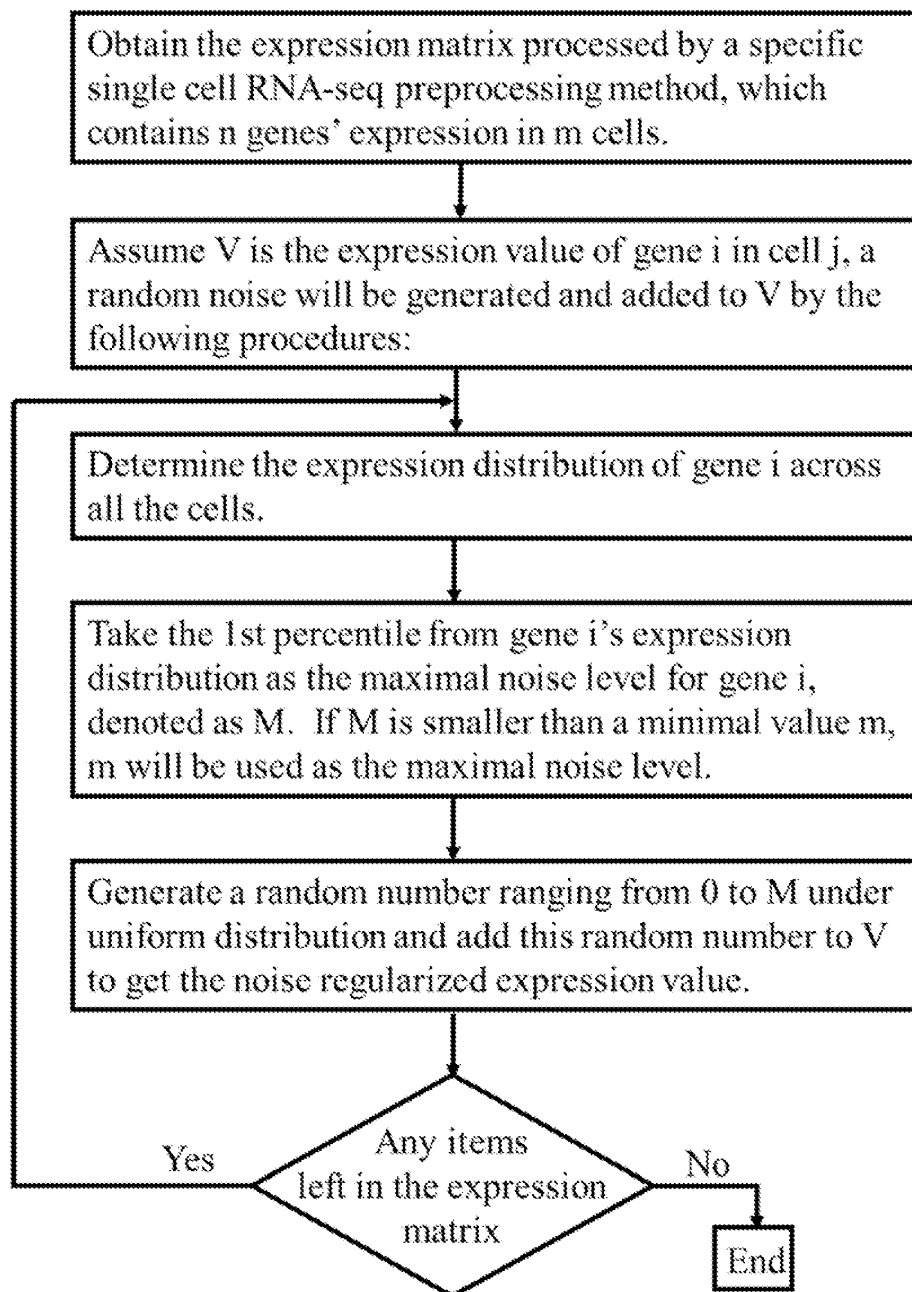
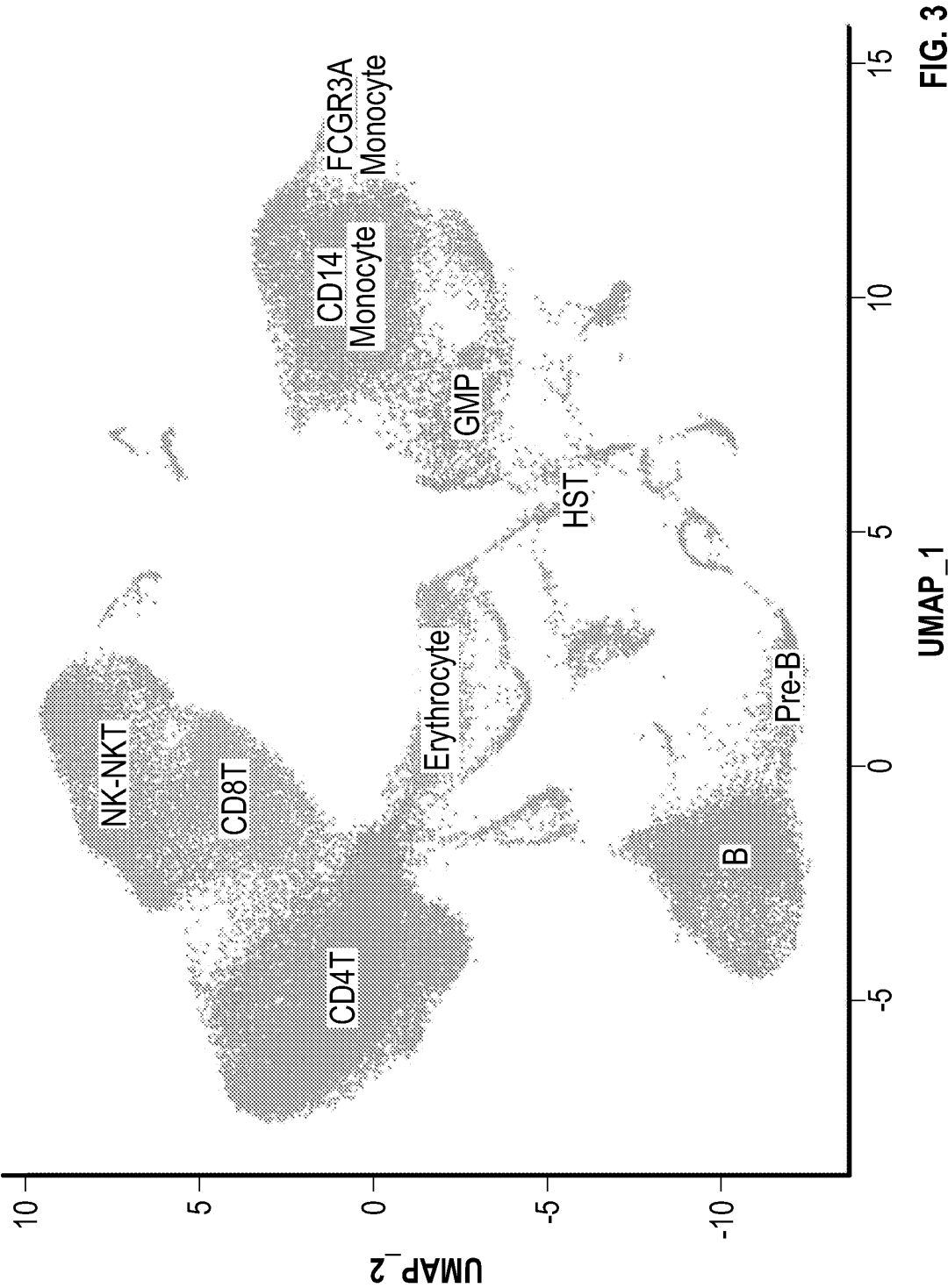


FIG. 2





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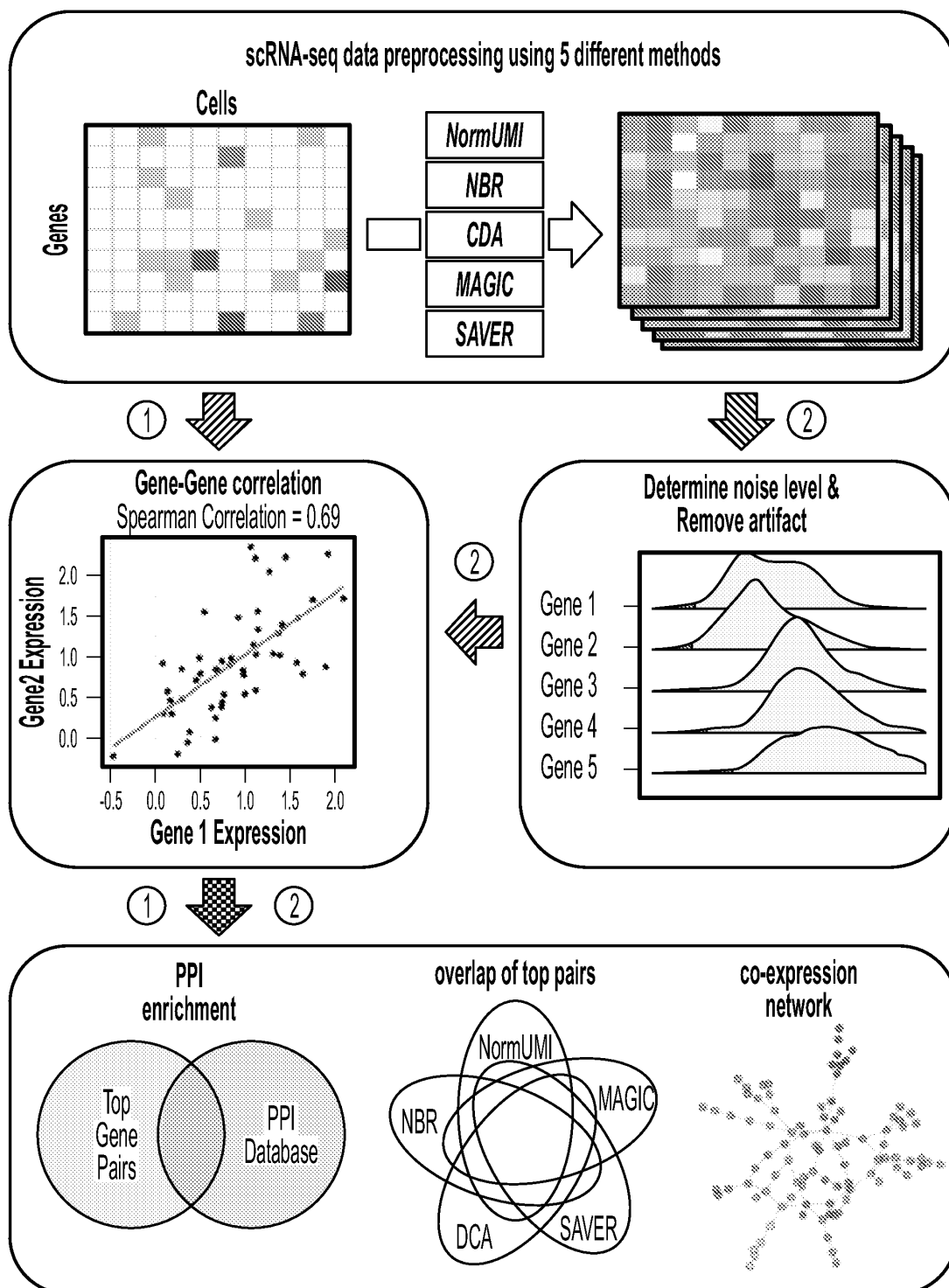


FIG. 4

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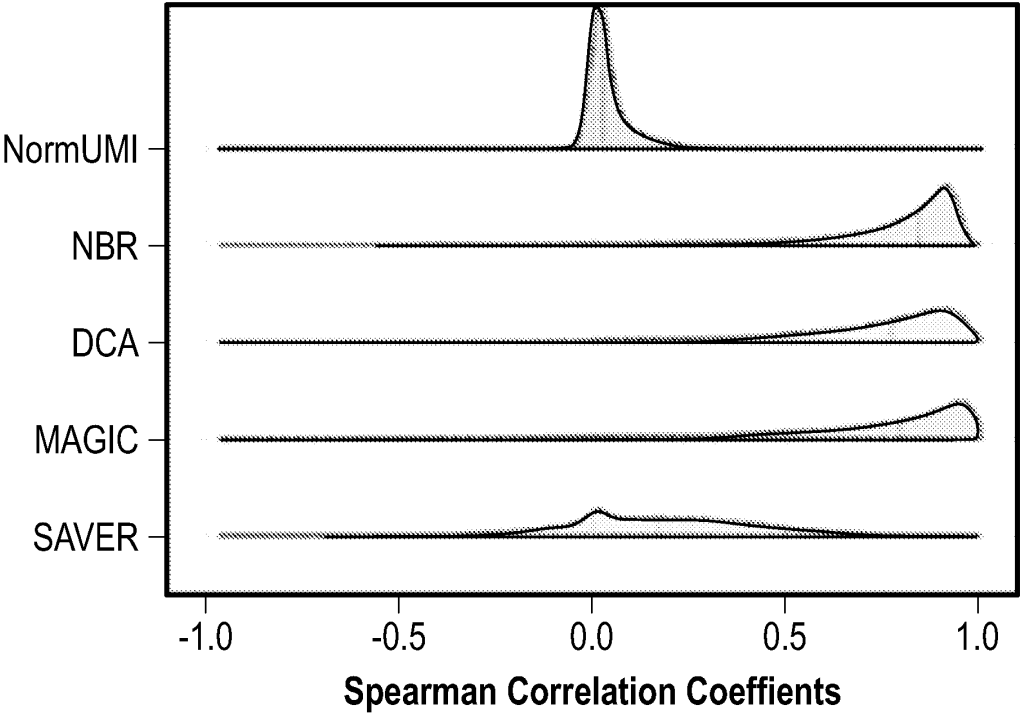


FIG. 5A

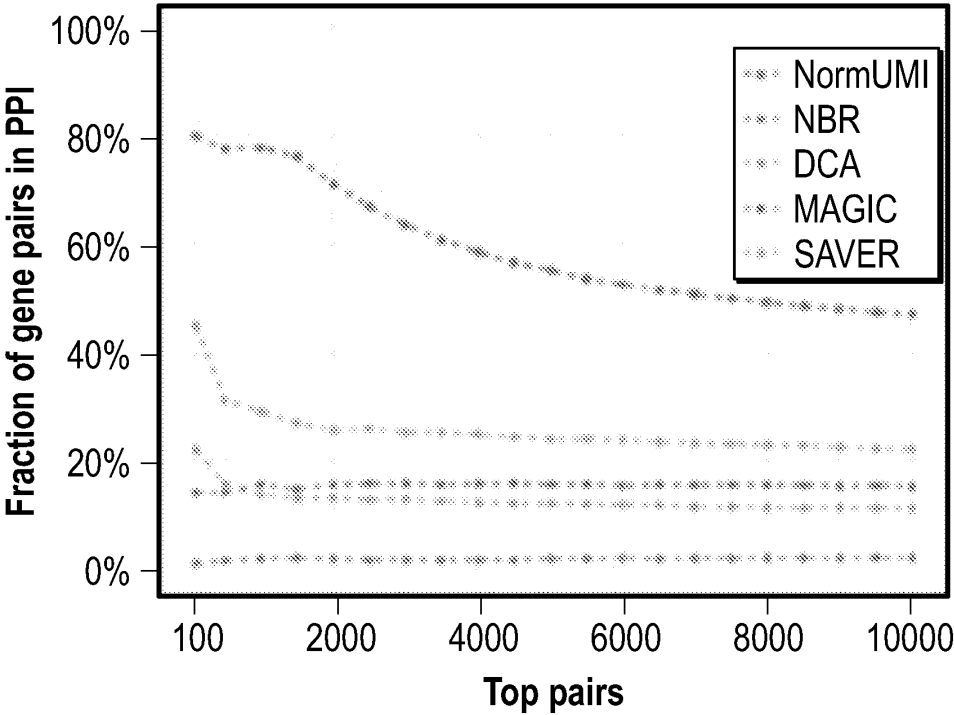


FIG. 5B

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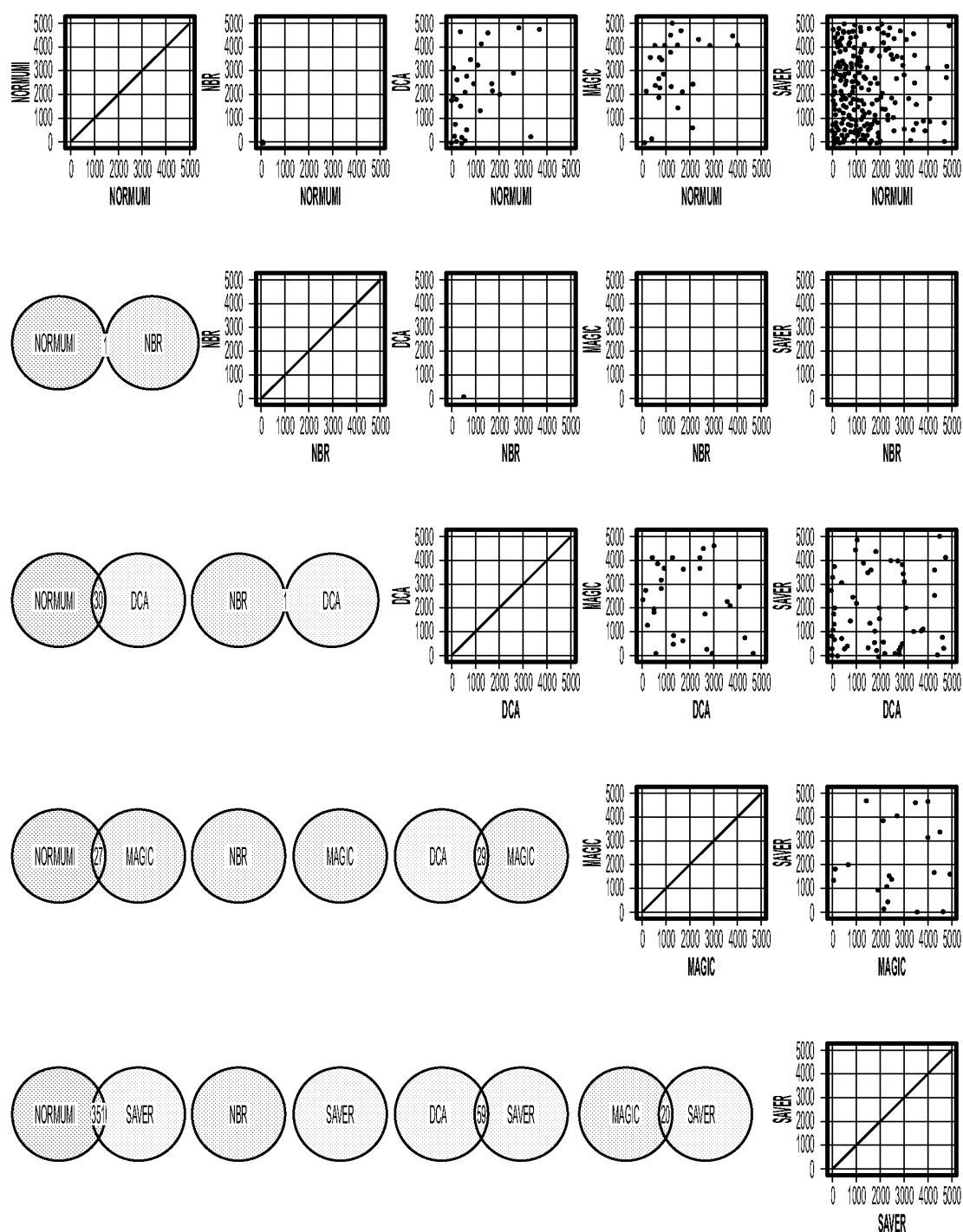


FIG. 5C

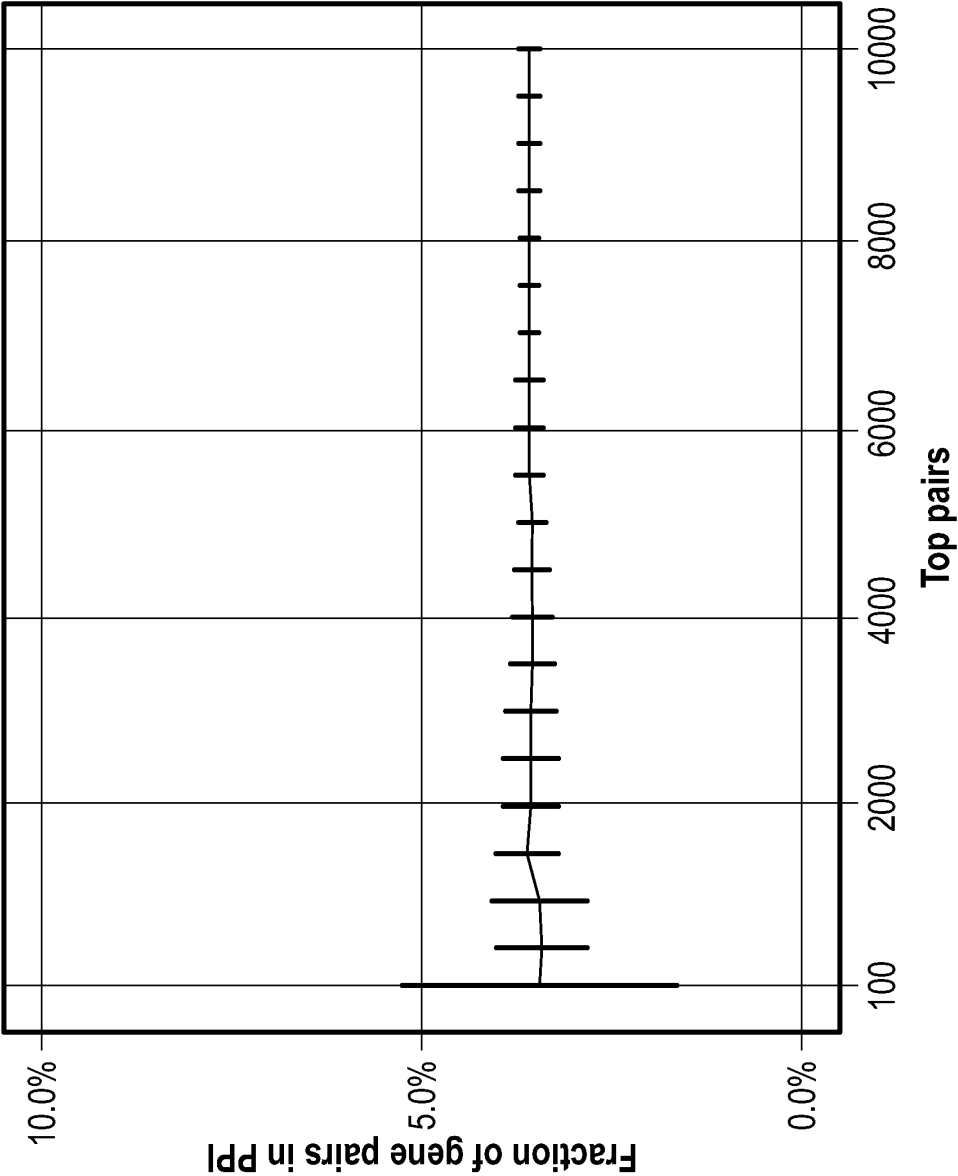


FIG. 5D

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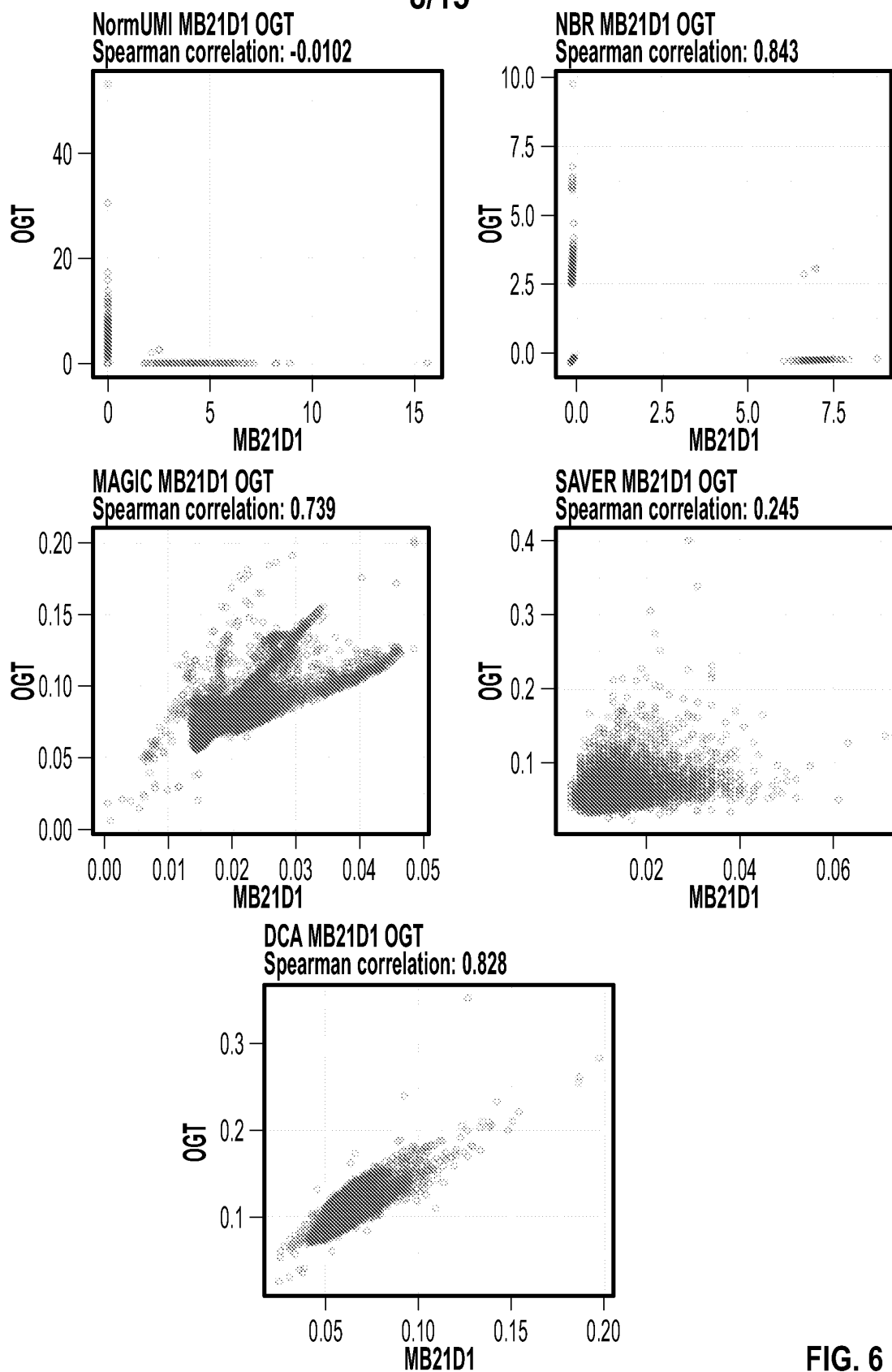


FIG. 6

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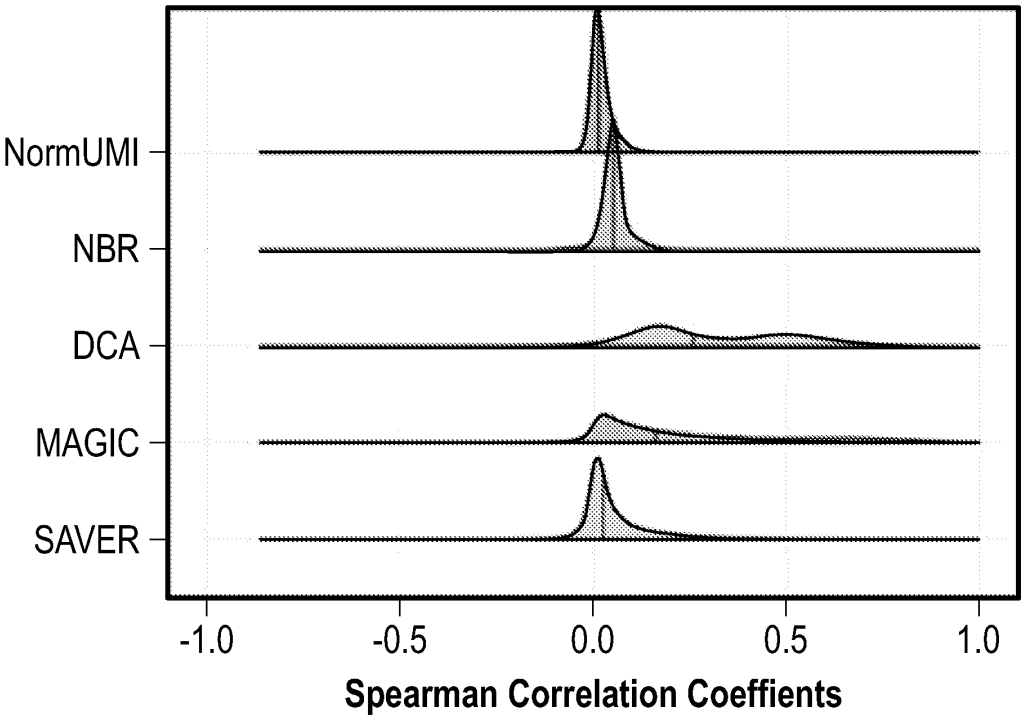


FIG. 7A

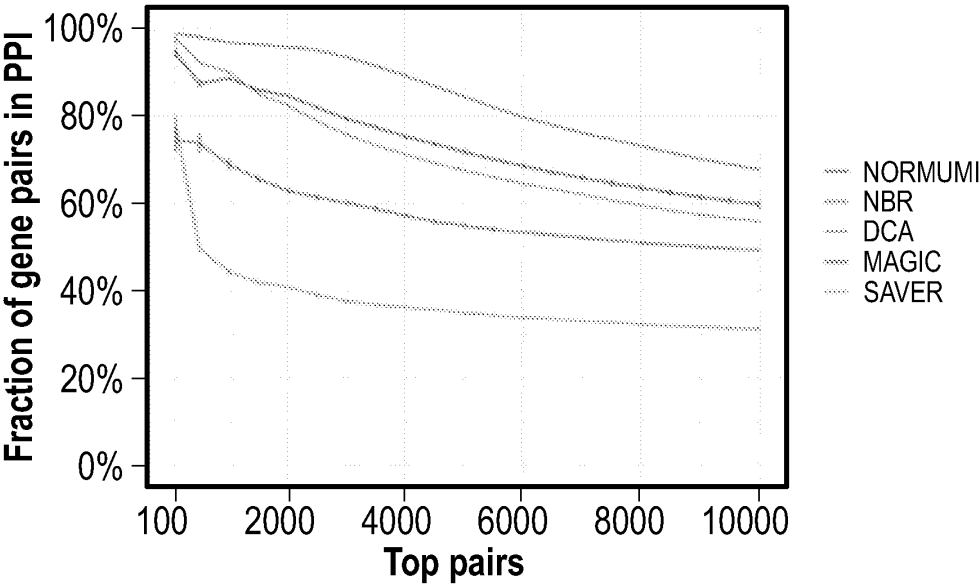


FIG. 7B

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C

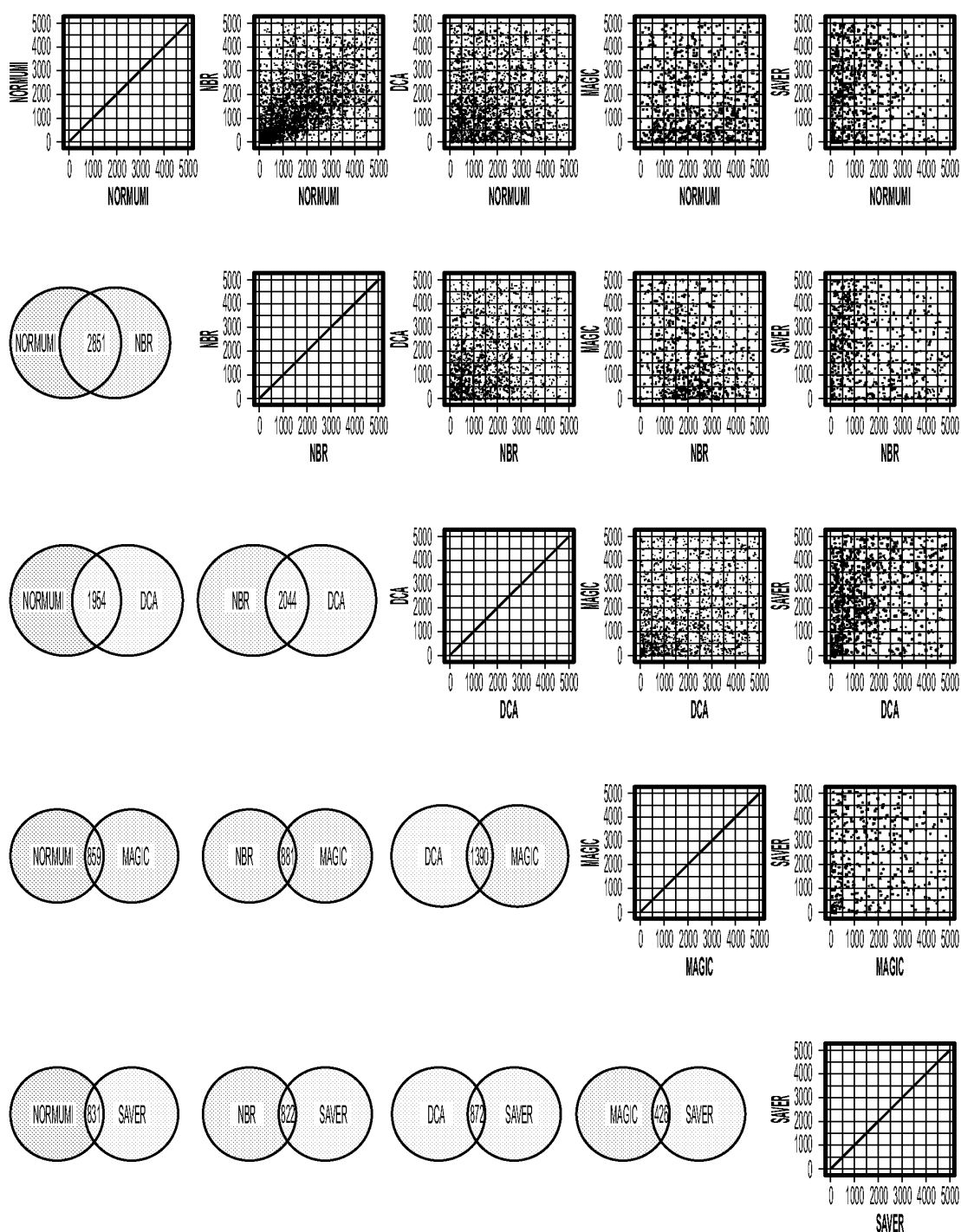


FIG. 7C

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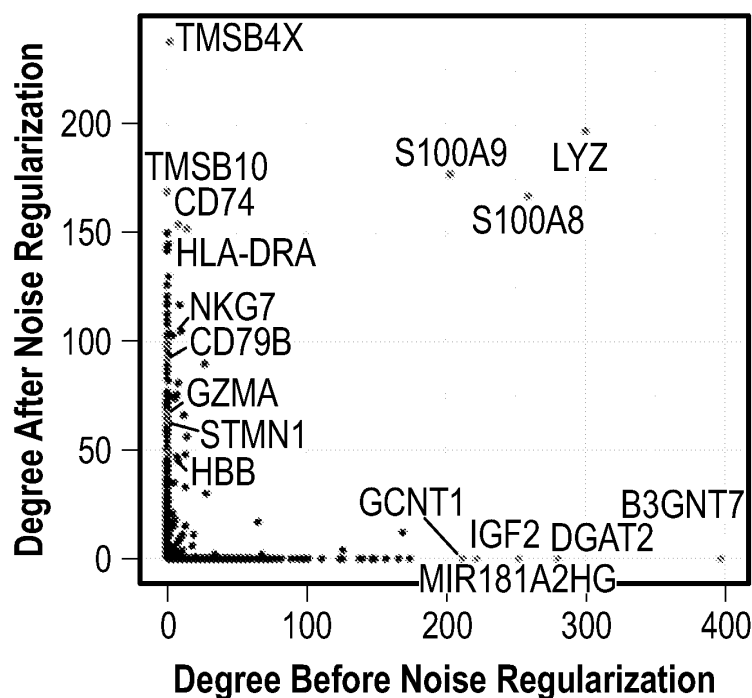


FIG. 8A

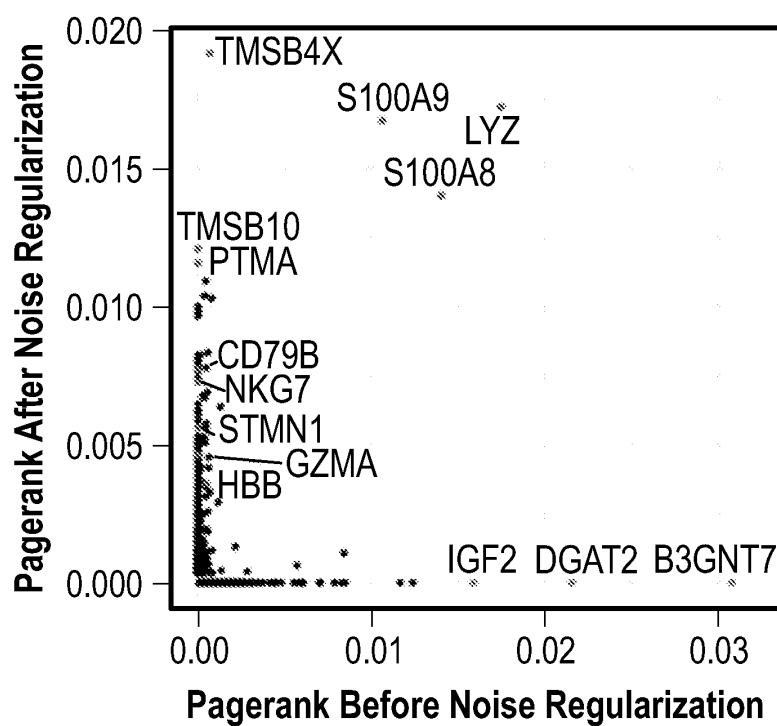
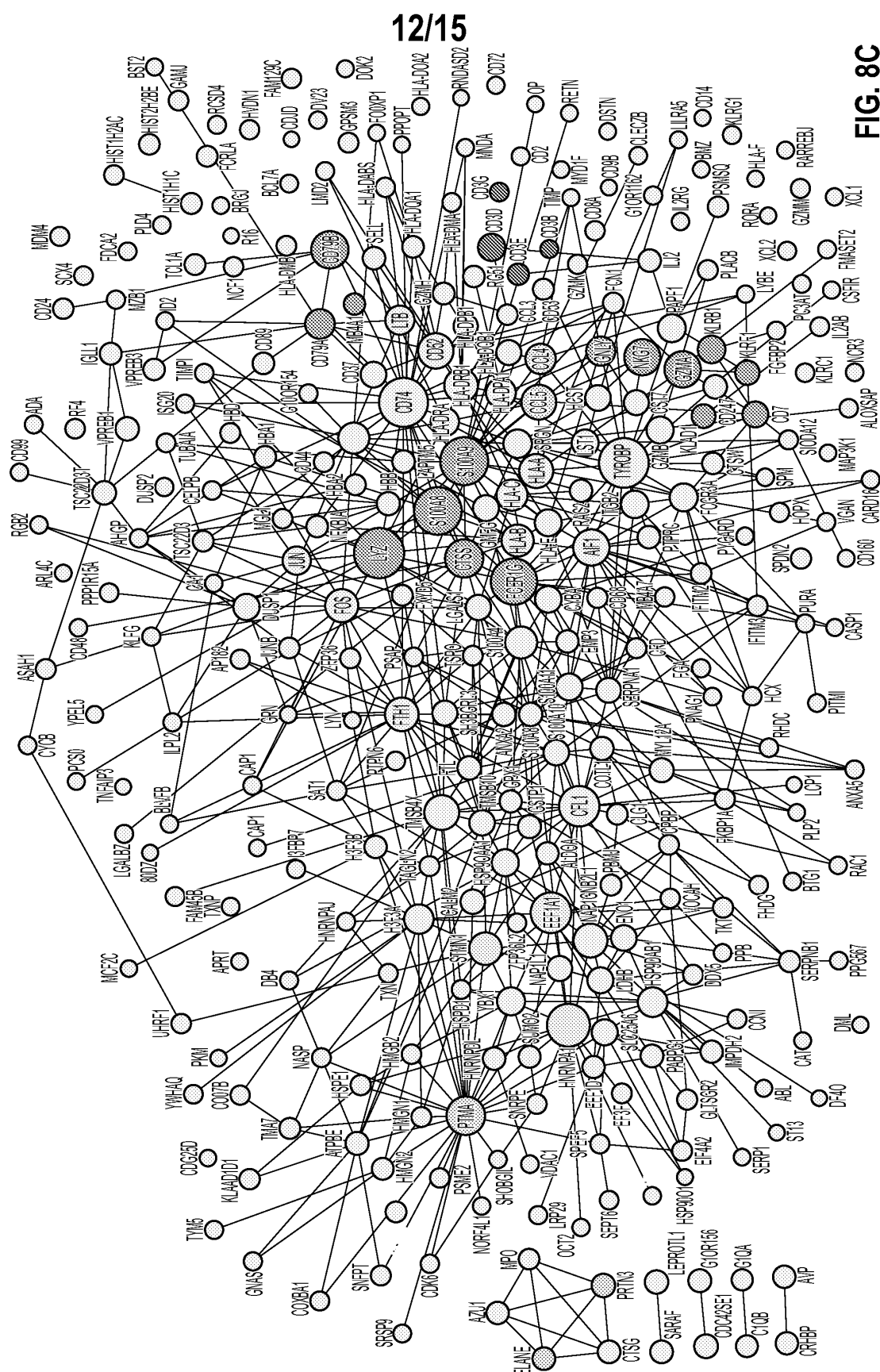
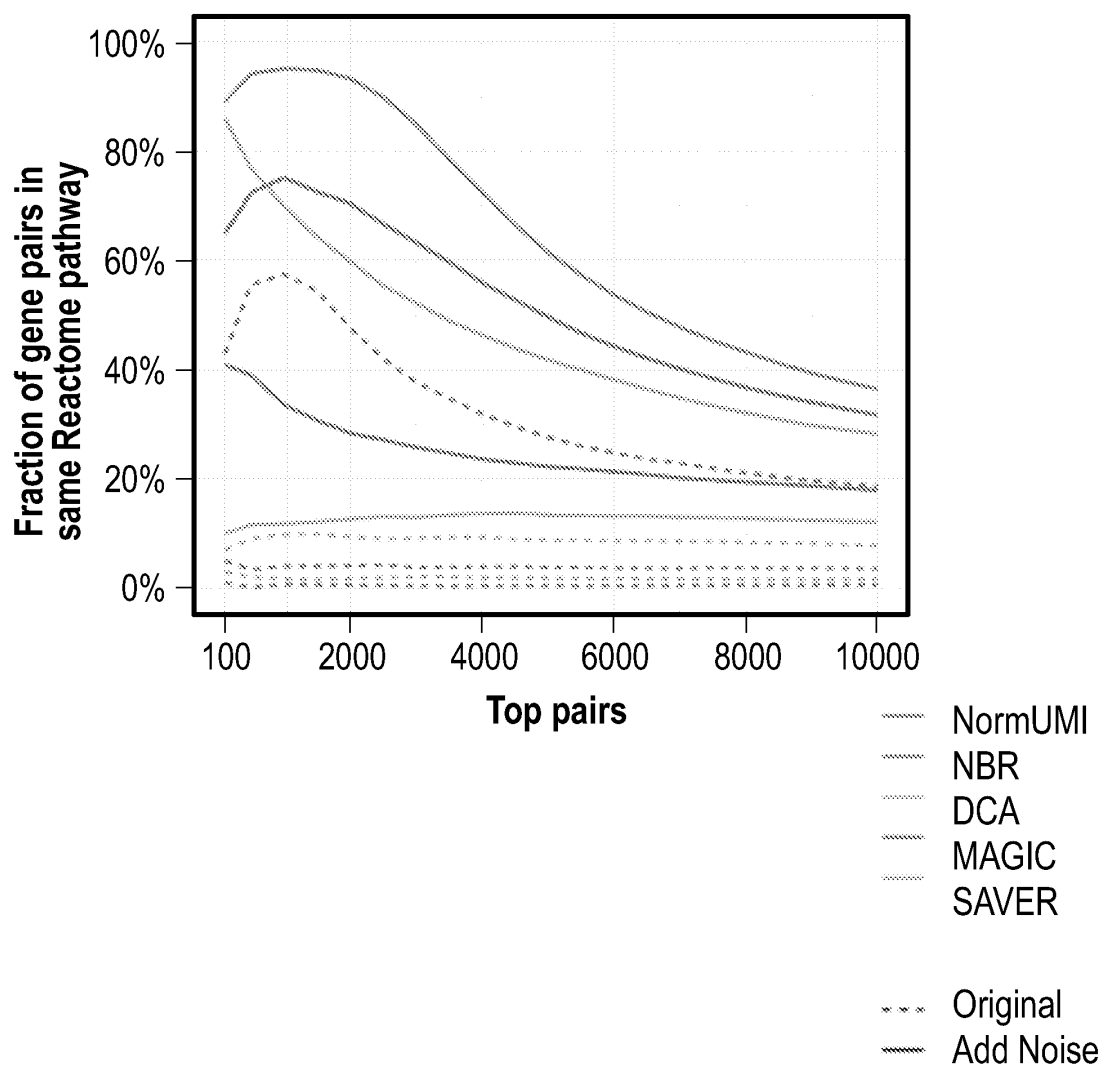


FIG. 8B



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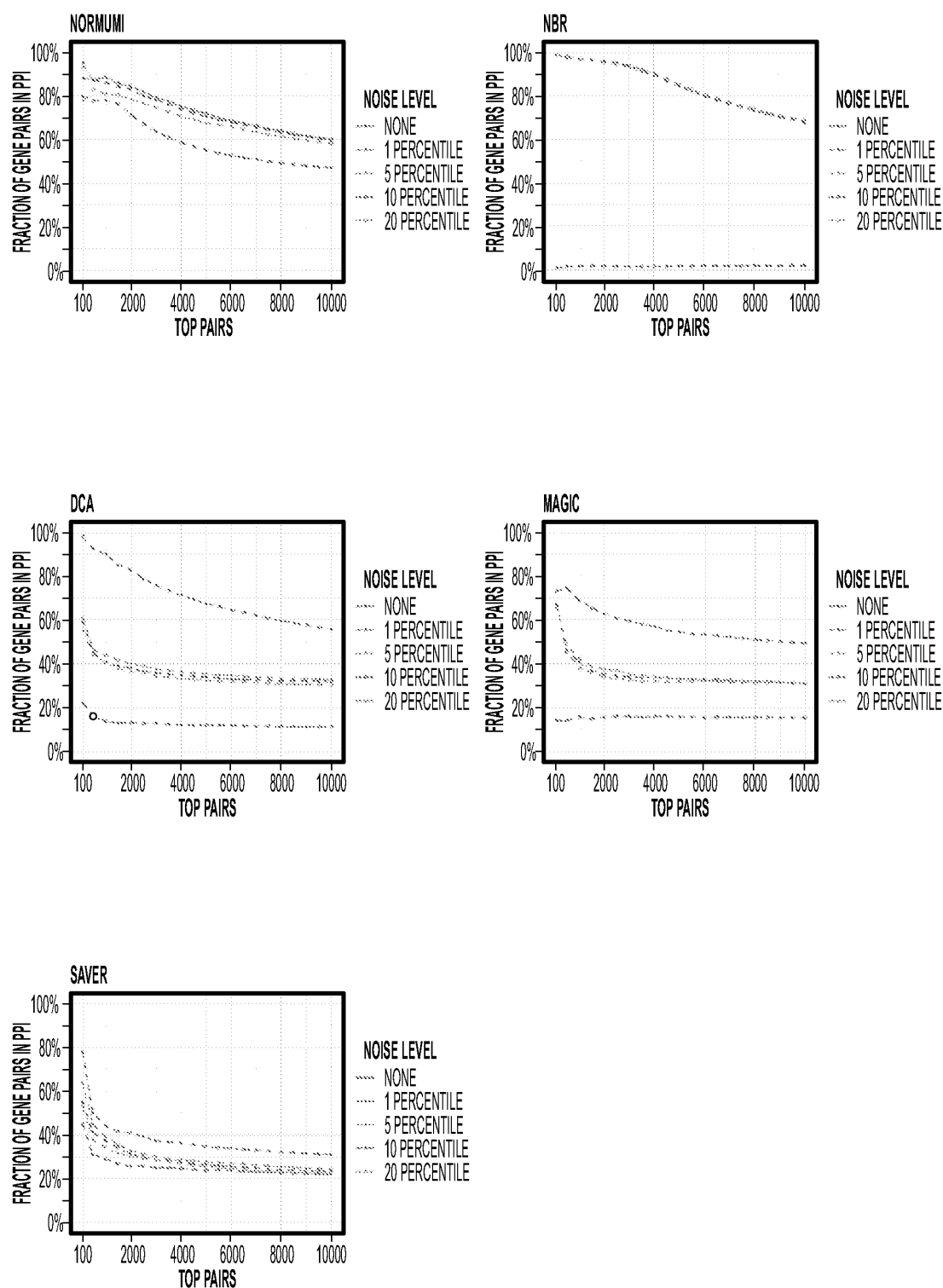


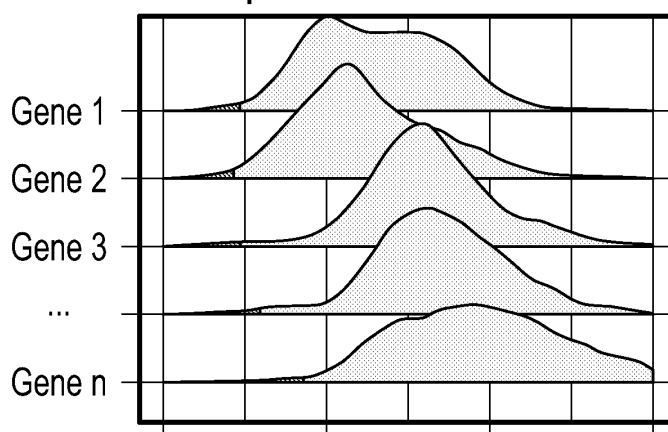
FIG. 10

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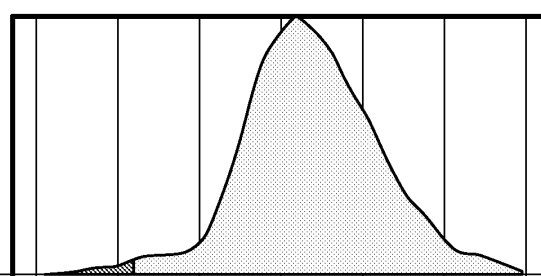
1. Expression matrix after data preprocessing

	Cell 1	Cell 2	Cell 3	...	Cell j	...	Cell m
Gene 1	V_{11}	V_{12}	V_{13}				
Gene 2	V_{21}	V_{22}	V_{23}				
Gene 3	V_{31}	V_{32}	V_{33}				
...							
Gene i					V_{ij}		
...							
Gene n							V_{nm}

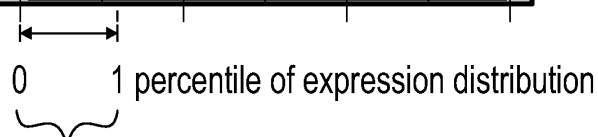
2. Derive expression distribution for each gene



3. Determine noise level for each gene



4. Add generated noises to the expression matrix



Noises were generated within this range under uniform distribution for each cell

FIG. 11