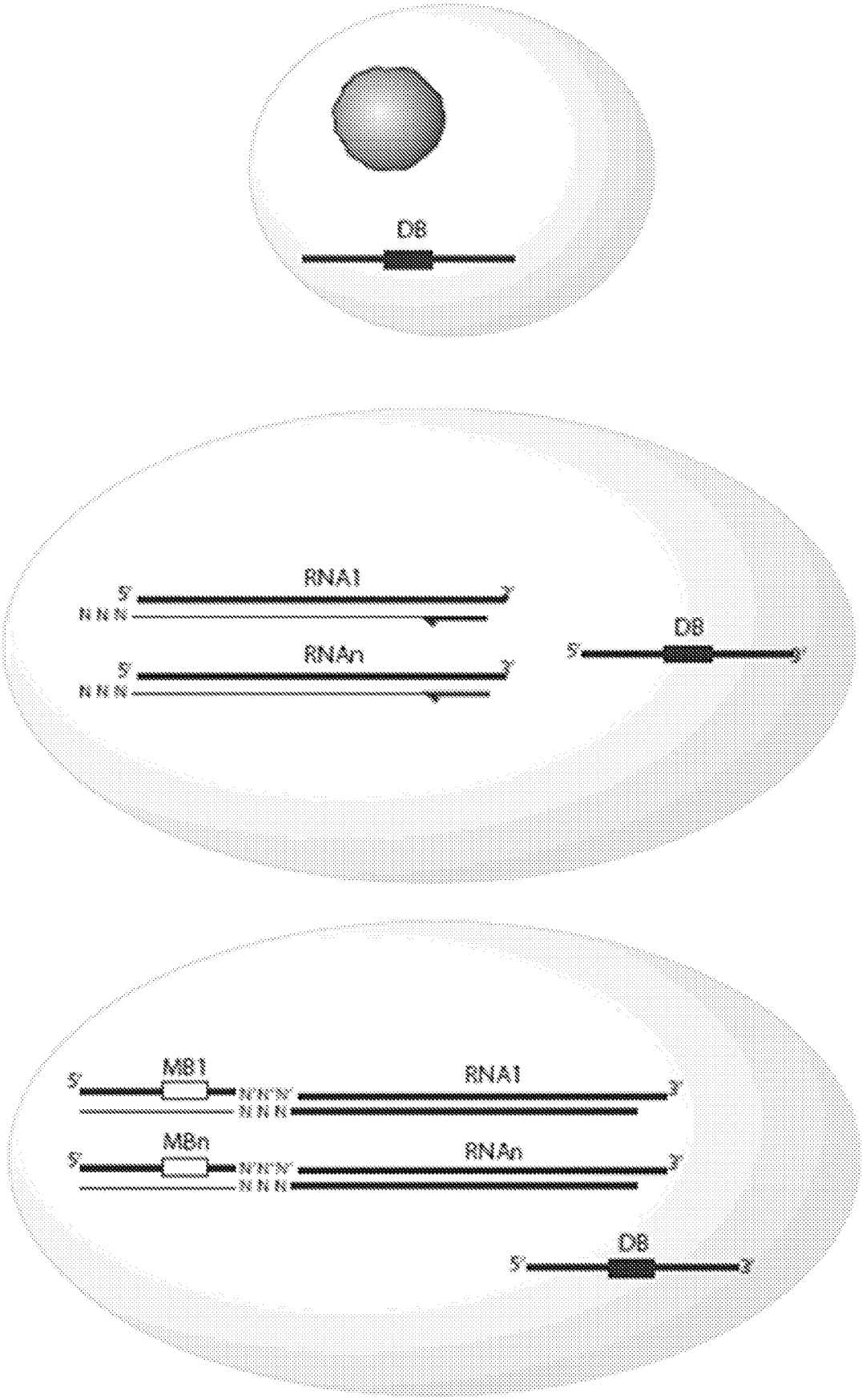

D8
RNA1
5'
N N N
3'
RNAn
5'
N N N
3'
D8
5'
3'
MB1
5'
N'N'N'
N N N
RNA1
3'
MBn
5'
N'N'N'
N N N
RNAn
3'
D8
5'
3'

FIG. 1A

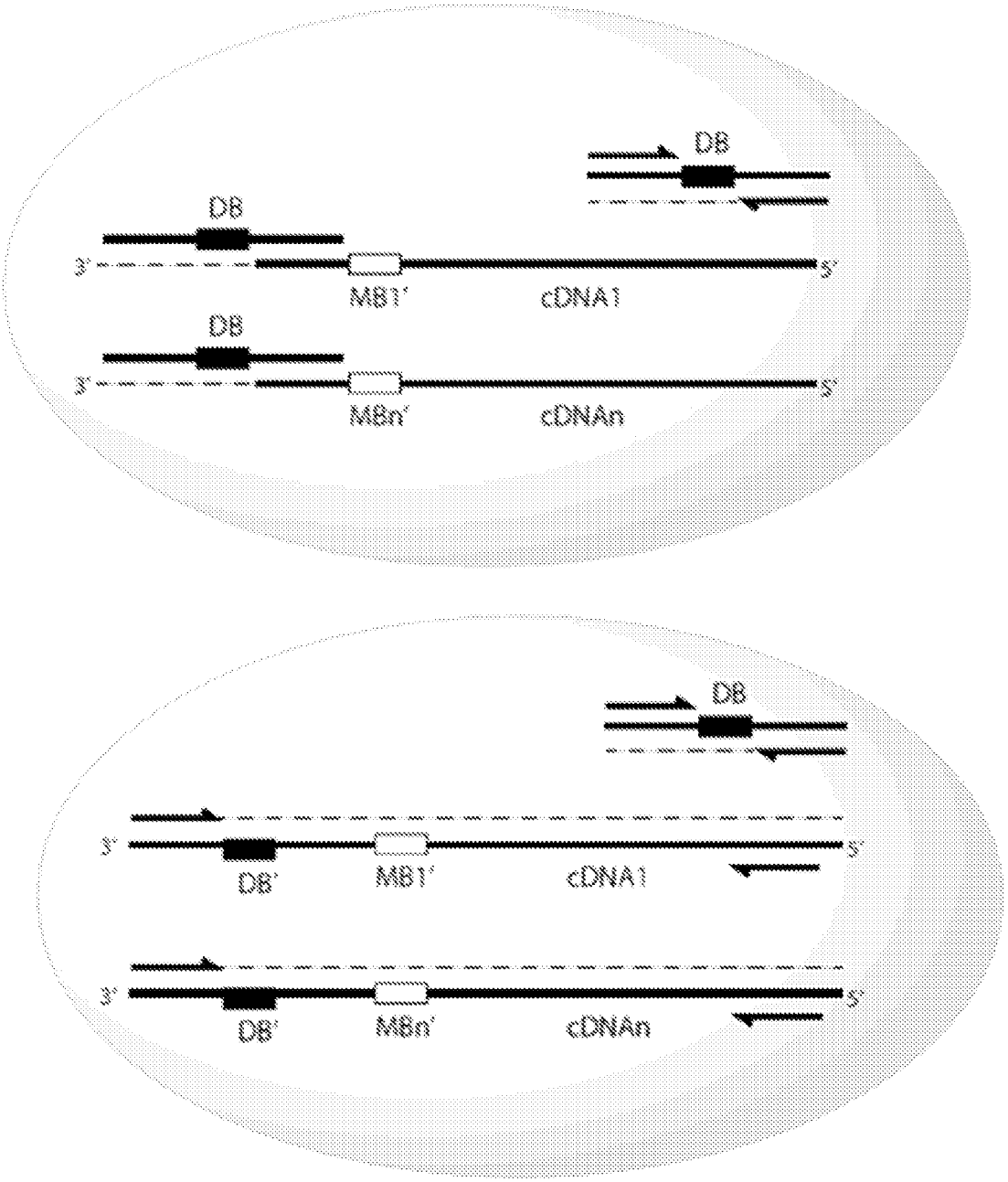

DB
DB
3'
5'
MB1'
cDNA1
DB
3'
5'
MBn'
cDNAn
DB
5'
5'
DB'
MB1'
cDNA1
3'
5'
DB'
MBn'
cDNAn
DB
MB1
cDNA1
5'
3'
3'
5'
DB
MBn
cDNAn
5'
3'
3'
5'

FIG. 1B

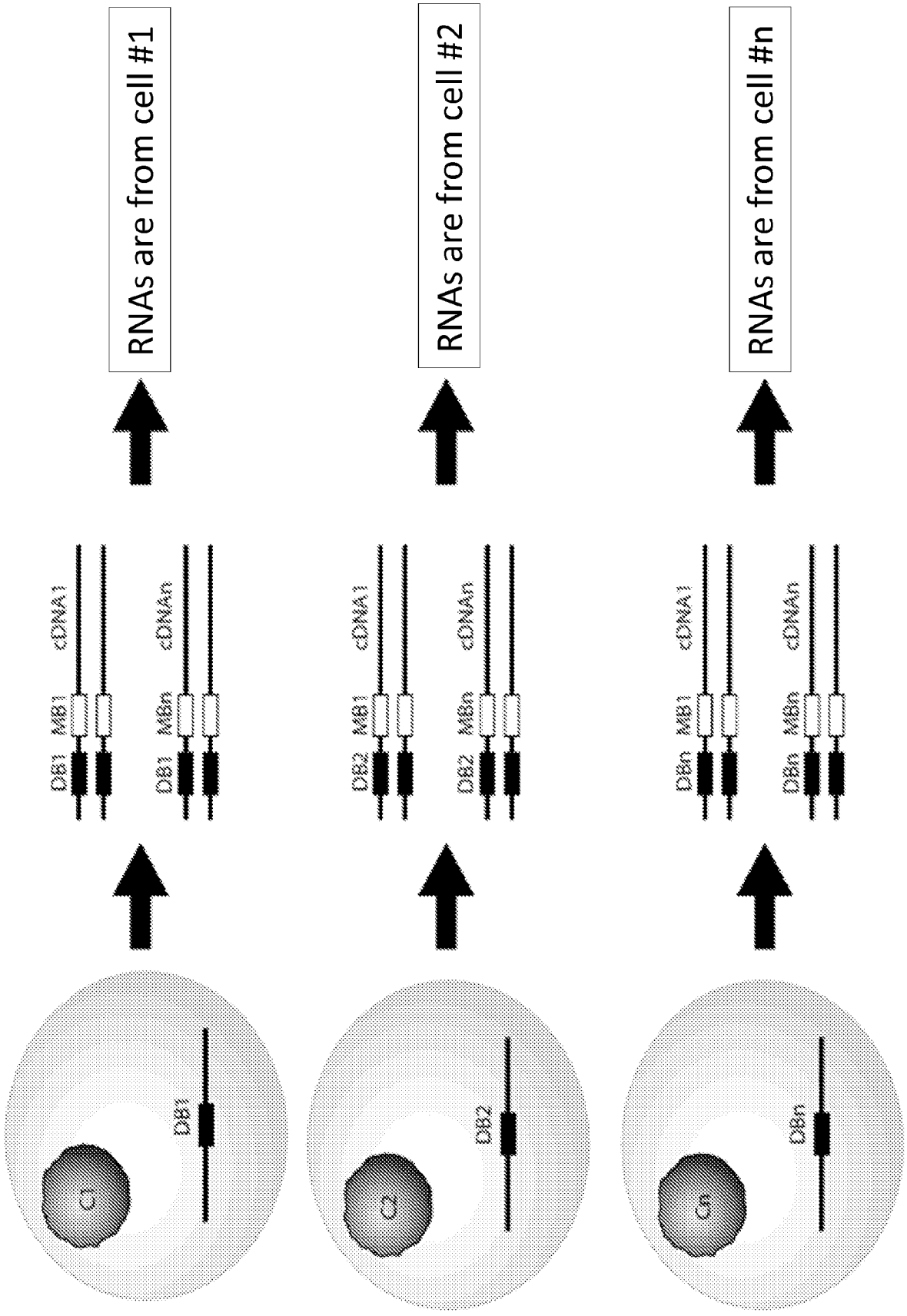

RNAs are from cell #1
RNAs are from cell #2
RNAs are from cell #n
DB1 MB1 cDNA1
DB1 MBn cDNAn
DB2 MB1 cDNA1
DB2 MBn cDNAn
DBn MB1 cDNA1
DBn MBn cDNAn
C1
DB1
C2
DB2
Cn
DBn

FIG. 2

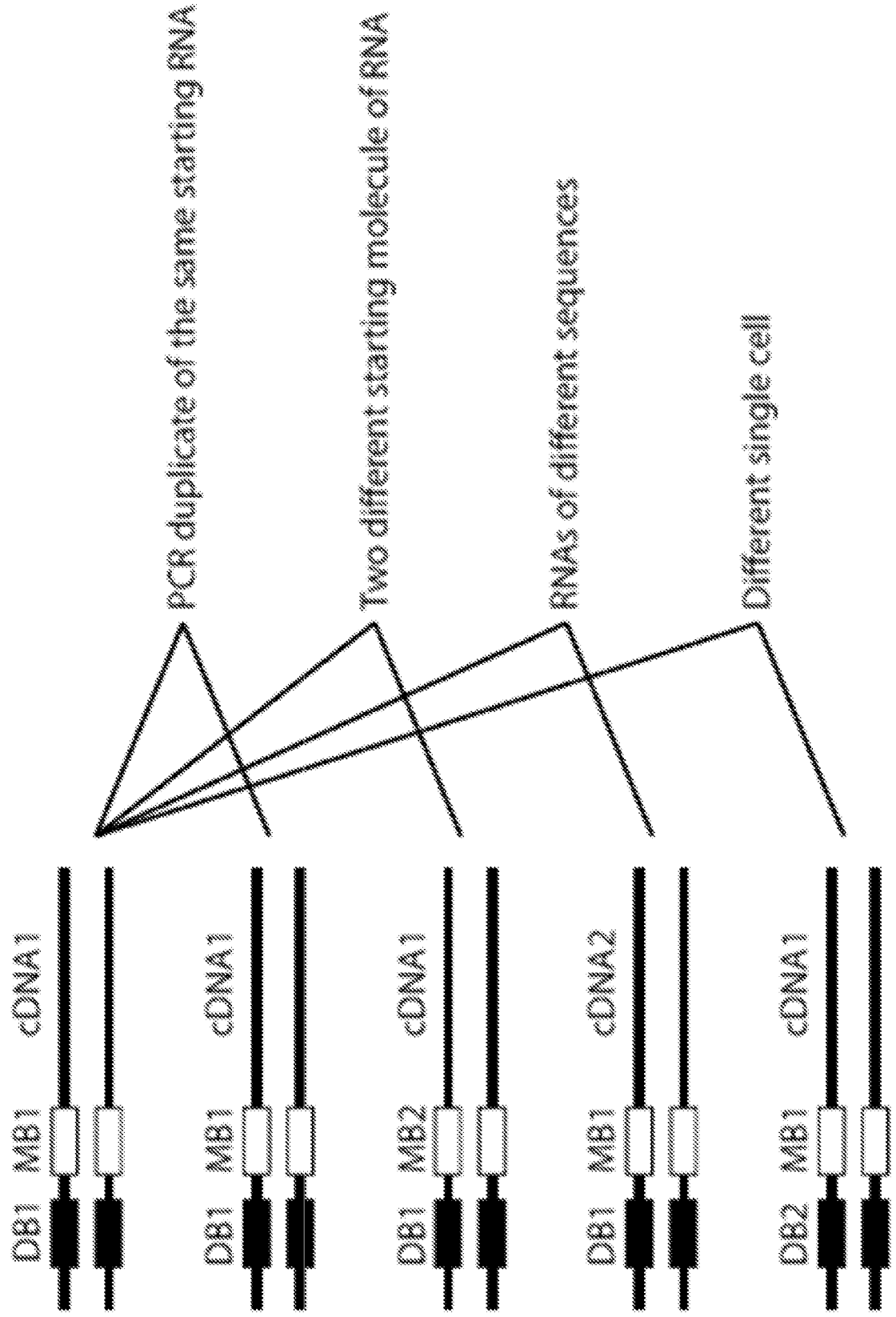

PCR duplicate of the same starting RNA
Two different starting molecule of RNA
RNAs of different sequences
Different single cell
DB1 MB1 cDNA1
DB1 MB1 cDNA1
DB1 MB2 cDNA1
DB1 MB1 cDNA2
DB2 MB1 cDNA1

FIG. 3

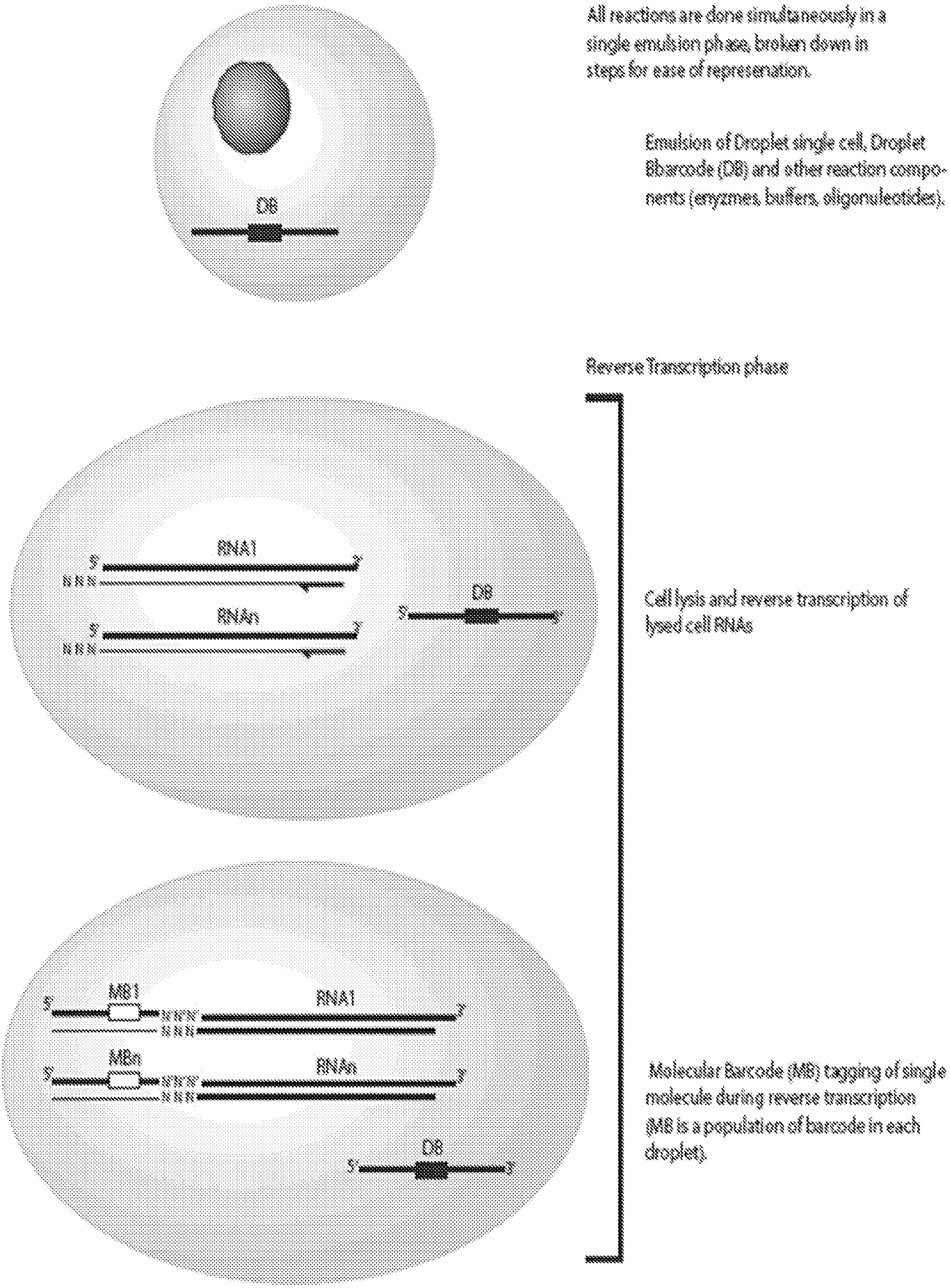

All reactions are done simultaneously in a single emulsion phase, broken down in steps for ease of represenation.
Emulsion of Droplet single cell, Droplet Bbarcode (DB) and other reaction components (enyzmes, buffers, oligonucleotides).
DB
Reverse Transcription phase
RNA1
RNAn
DB
Cell lysis and reverse transcription of lysed cell RNAs
MB1
RNA1
MBn
RNAn
DB
Molecular Barcode (MB) tagging of single molecule during reverse transcription (MB is a population of barcode in each droplet).

FIG. 4A

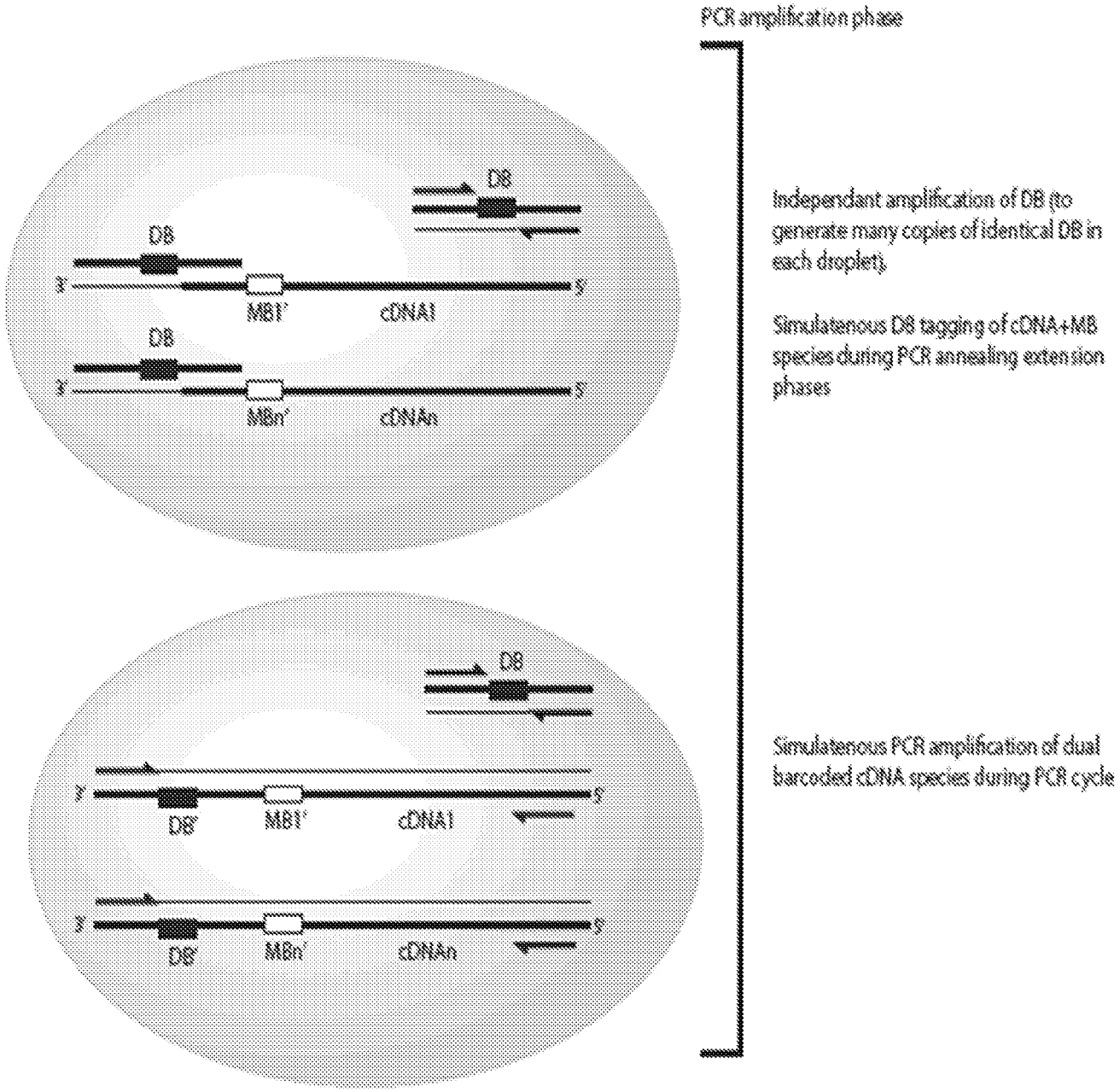

PCR amplification phase
DB
DB
3'
5'
MB1'
cDNA1
DB
DB
3'
5'
MBn'
cDNAn
Independant amplification of DB (to generate many copies of identical DB in each droplet).
Simulatenous DB tagging of cDNA+MB species during PCR annealing extension phases
DB
3'
5'
DB'
MB1'
cDNA1
3'
5'
DB'
MBn'
cDNAn
Simulatenous PCR amplification of dual barcoded cDNA species during PCR cycle
DB
MB1
cDNA1
5'
3'
3'
5'
DB
MBn
cDNAn
5'
3'
3'
5'
Final amplification product recovered from emulsion

FIG. 4B

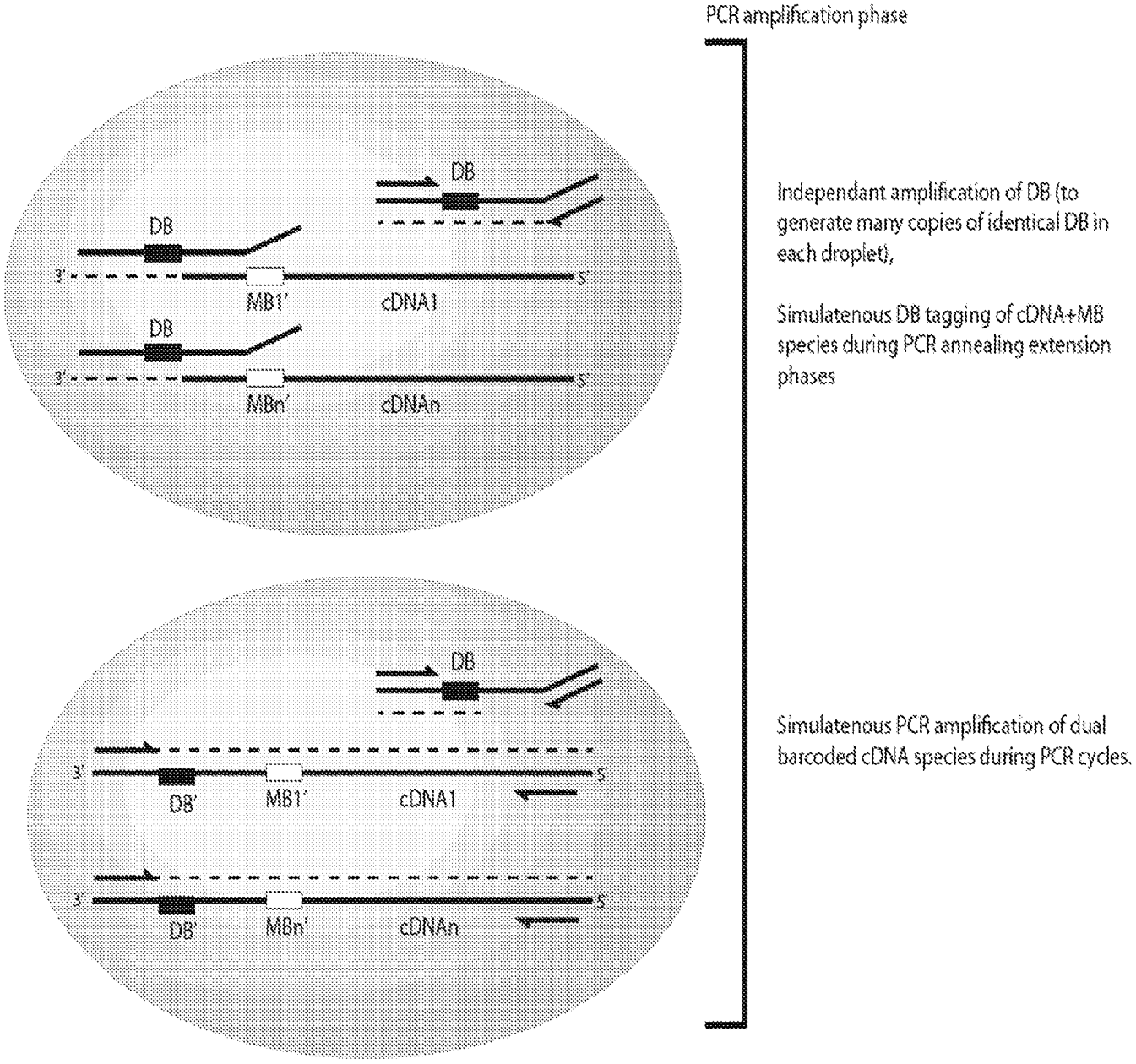

PCR amplification phase
DB
DB
3'
5'
MB1'
cDNA1
DB
3'
5'
MBn'
cDNAn
Independant amplification of DB (to generate many copies of identical DB in each droplet),
Simulatenous DB tagging of cDNA+MB species during PCR annealing extension phases
DB
3'
5'
DB'
MB1'
cDNA1
3'
5'
DB'
MBn'
cDNAn
Simulatenous PCR amplification of dual barcoded cDNA species during PCR cycles.
DB
MB1
cDNA1
5'
3'
3'
5'
DB
MBn
cDNAn
5'
3'
3'
5'
Final amplification product recovered from emulsion

FIG. 4C

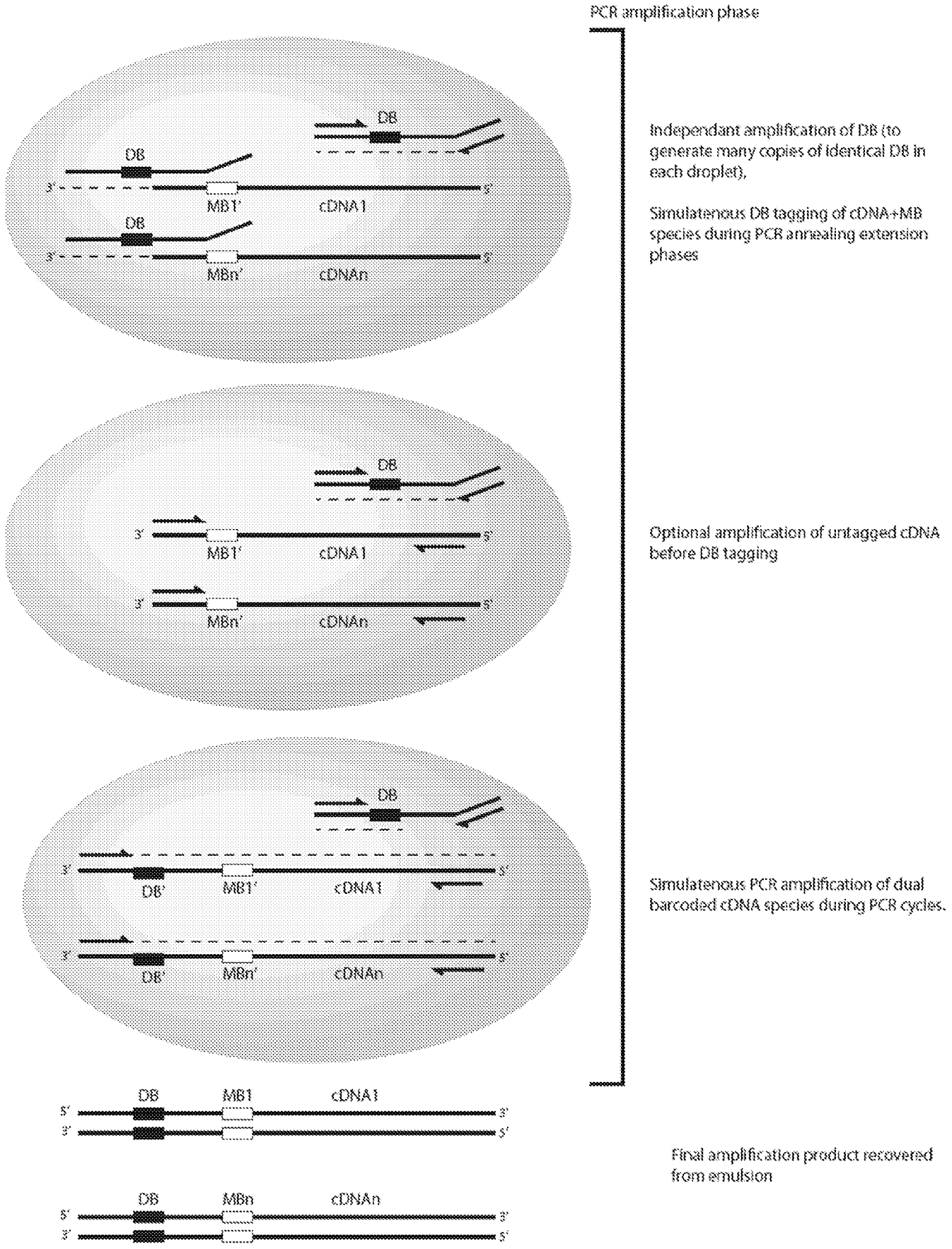

PCR amplification phase
DB
DB
3'
5'
MB1'
cDNA1
DB
3'
5'
MBn'
cDNAn
Independant amplification of DB (to generate many copies of identical DB in each droplet),
Simulatenous DB tagging of cDNA+MB species during PCR annealing extension phases
DB
3'
5'
MB1'
cDNA1
3'
5'
MBn'
cDNAn
Optional amplification of untagged cDNA before DB tagging
DB
3'
5'
DB'
MB1'
cDNA1
3'
5'
DB'
MBn'
cDNAn
Simulatenous PCR amplification of dual barcoded cDNA species during PCR cycles.
DB
MB1
cDNA1
5'
3'
3'
5'
DB
MBn
cDNAn
5'
3'
3'
5'
Final amplification product recovered from emulsion

FIG. 4D

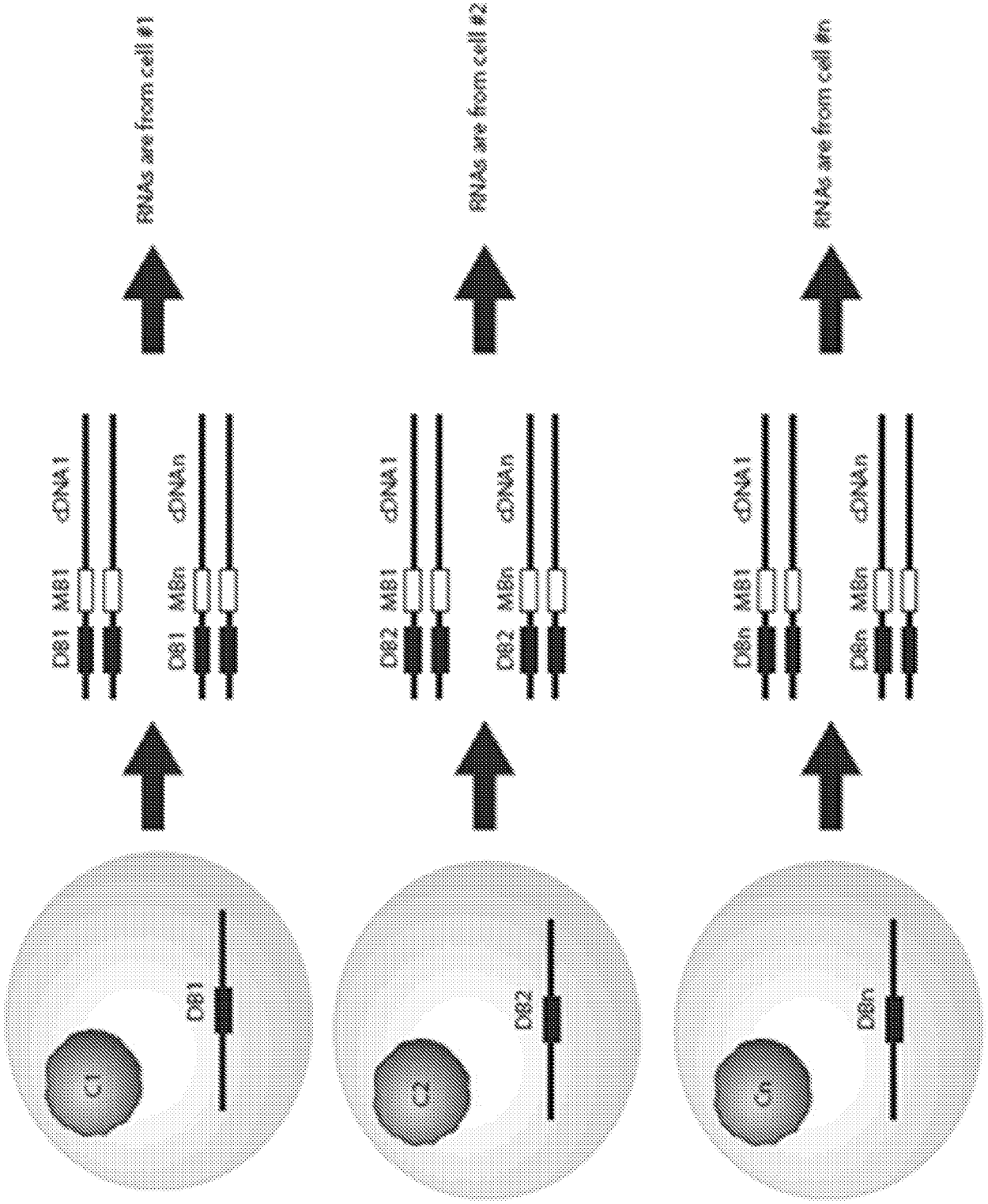

C1
DB1
DB1 MB1 cDNA1
DB1 MBn cDNAn
RNAs are from cell #1
C2
DB2
DB2 MB1 cDNA1
DB2 MBn cDNAn
RNAs are from cell #2
Cn
DBn
DBn MB1 cDNA1
DBn MBn cDNAn
RNAs are from cell #n

FIG. 5

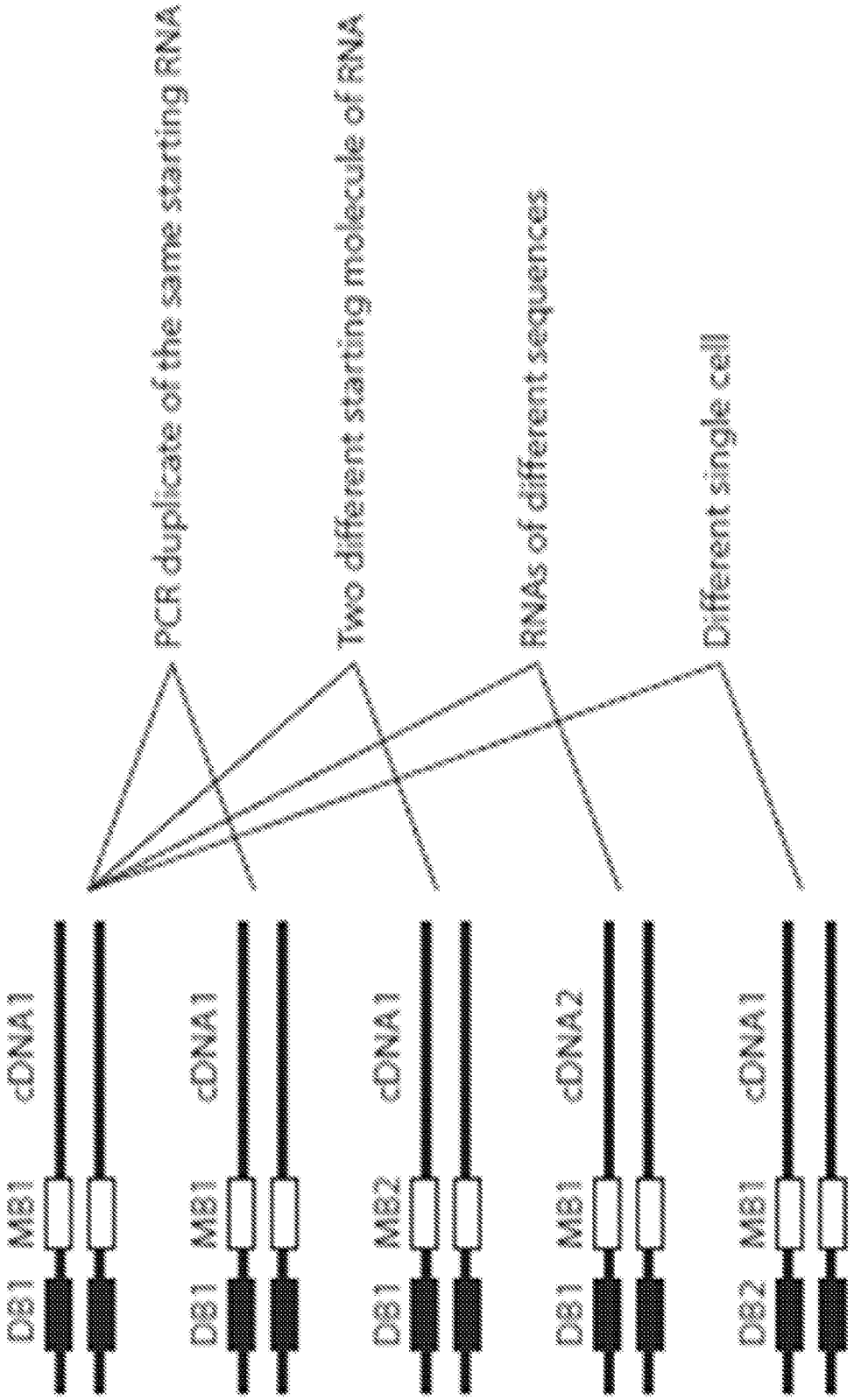

PCR duplicate of the same starting RNA
Two different starting molecule of RNA
RNAs of different sequences
Different single cell
DB1 MB1 cDNA1
DB1 MB1 cDNA1
DB1 MB2 cDNA1
DB1 MB1 cDNA2
DB2 MB1 cDNA1

FIG. 6

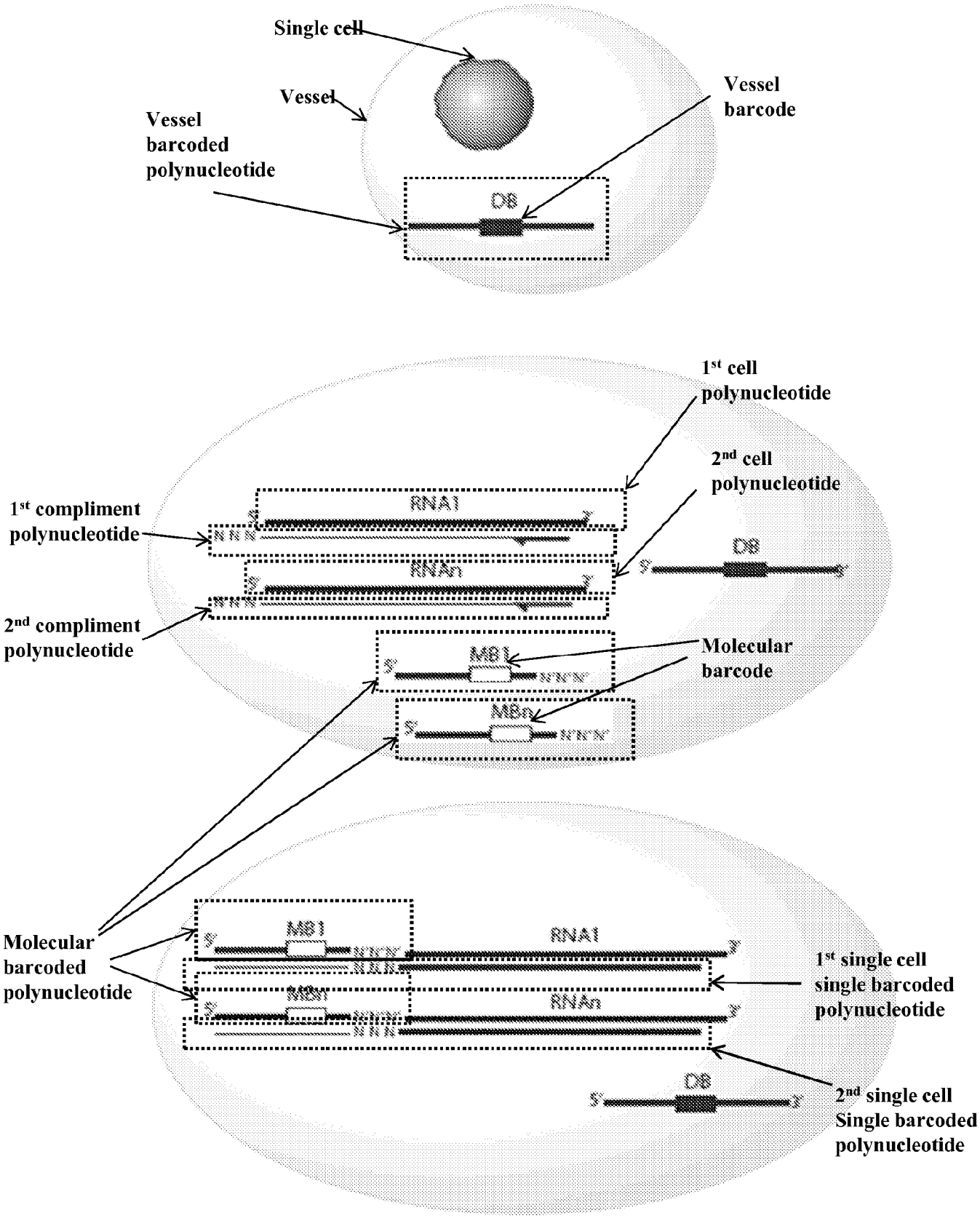

Single cell
Vessel
Vessel barcoded polynucleotide
Vessel barcode
OB
1st cell polynucleotide
2nd cell polynucleotide
1st compliment polynucleotide
RNA1
RNAn
OB
2nd compliment polynucleotide
Molecular barcode
MB1
MBn
Molecular barcoded polynucleotide
MB1
RNA1
1st single cell single barcoded polynucleotide
MBn
RNAn
OB
2nd single cell Single barcoded polynucleotide

FIG. 7A

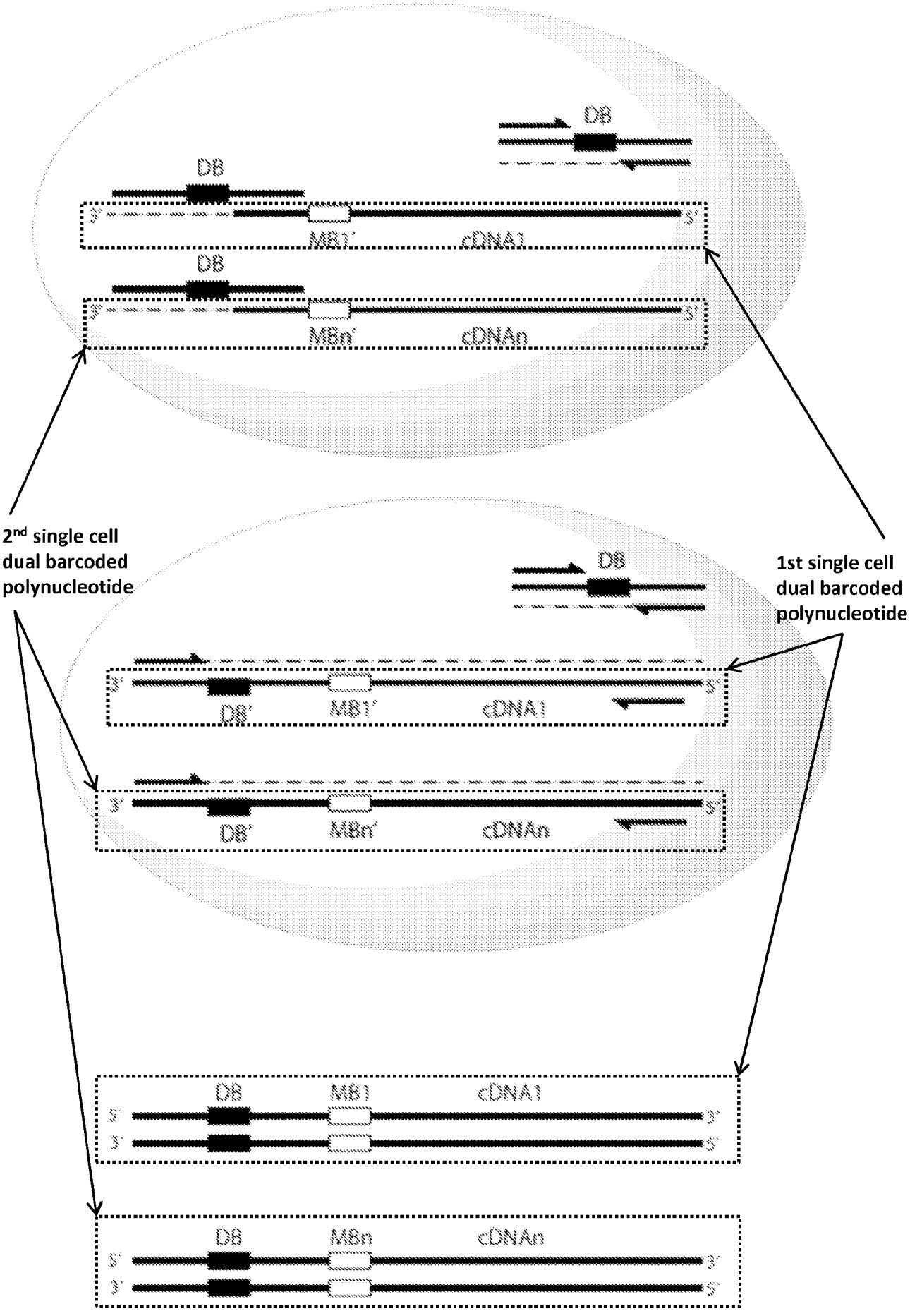

DB
DB
3'
5'
MB1'
cDNA1
DB
3'
5'
MBn'
cDNAn
2nd single cell dual barcoded polynucleotide
DB
1st single cell dual barcoded polynucleotide
3'
5'
DB'
MB1'
cDNA1
3'
5'
DB'
MBn'
cDNAn
DB
MB1
cDNA1
5'
3'
3'
5'
DB
MBn
cDNAn
5'
3'
3'
5'

FIG. 7B