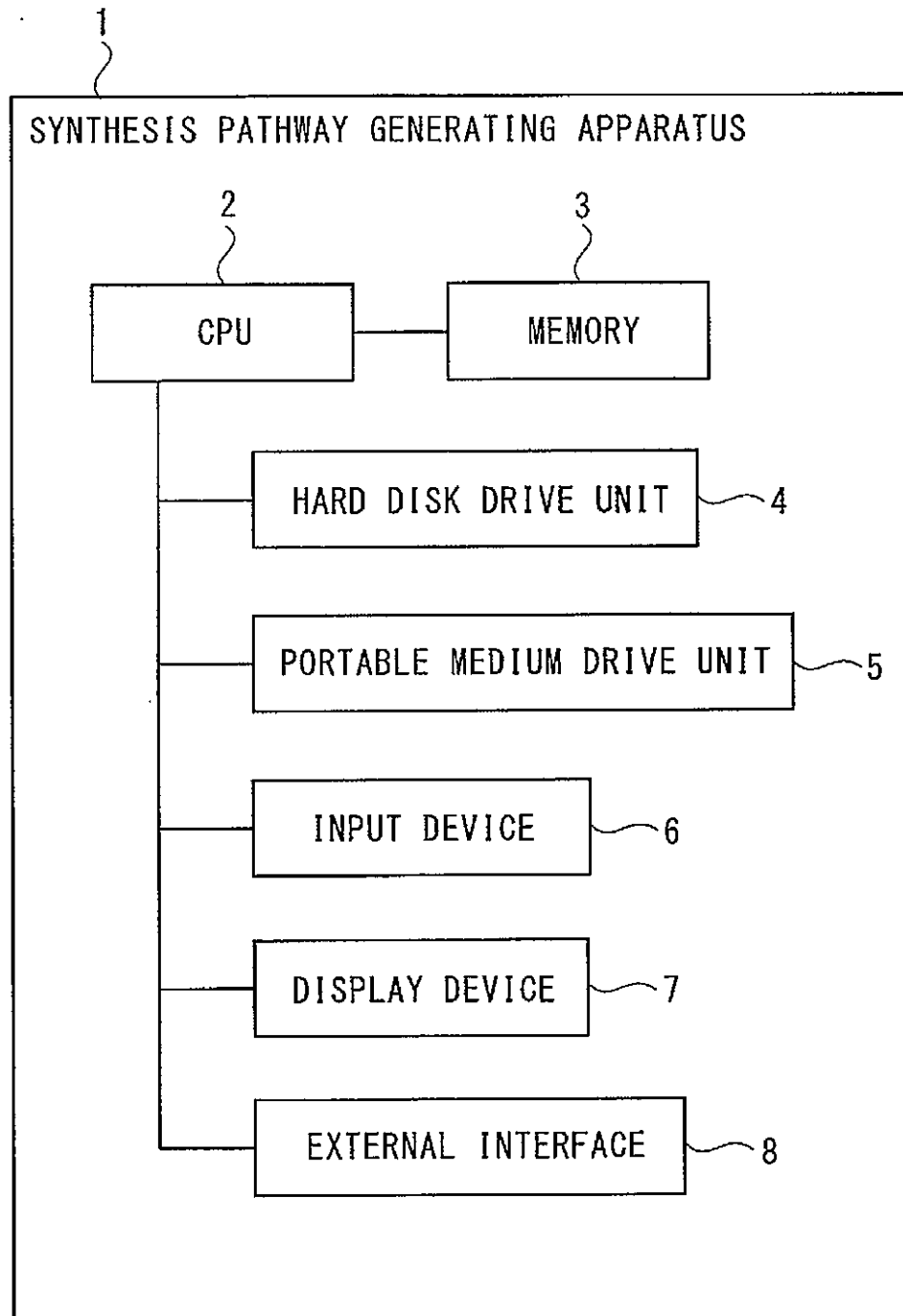
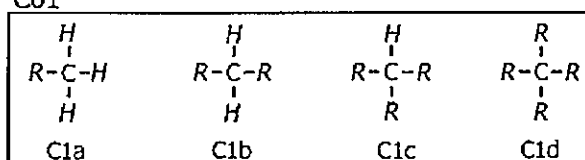


[FIG. 1]

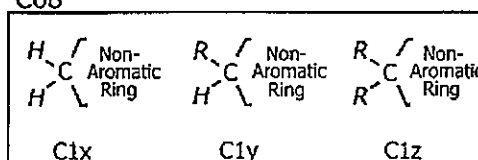


[FIG. 2]

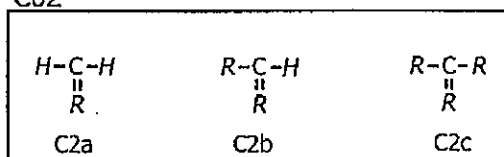
C01



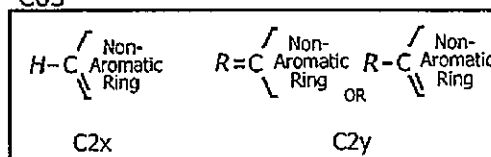
C08



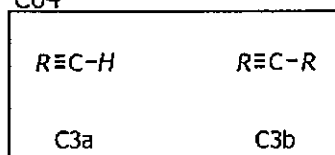
C02



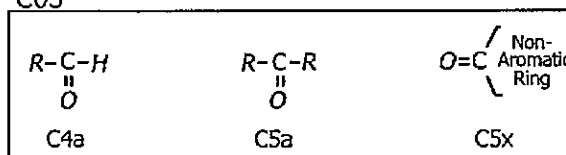
C03



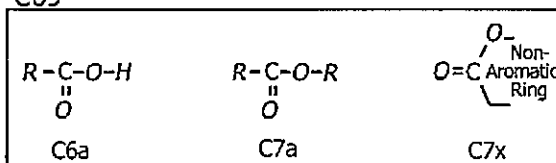
C04



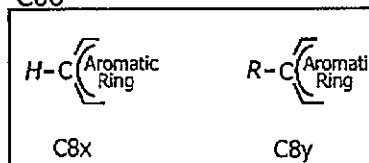
C05



C09



C06



[Fig.3]

IDENTIFICATION NUMBER A	IDENTIFICATION NUMBER B
1 C01	C1a
	C1b
	C1c
	C1d
2 C08	C1x
	C1y
	C1z
3 C02	C2a
	C2b
	C2c
4 C03	C2x
	C2y
5 C04	C3a
	C3b
6 C05	C4a
	C5a
	C5x
7 C09	C6a
	C7a
	C7x
8 C06	C8x
	C8y
9 C07	C0

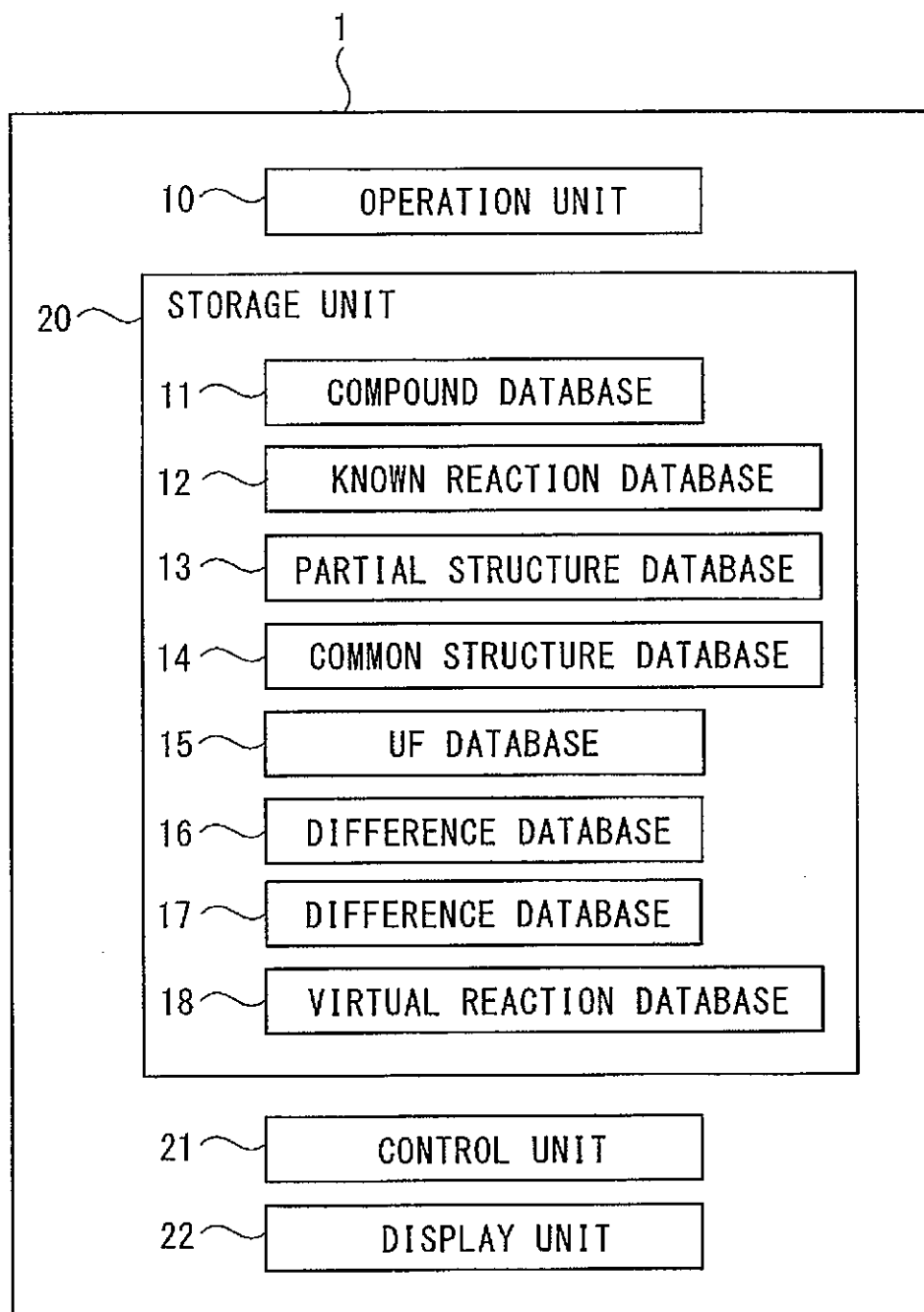
IDENTIFICATION NUMBER A	IDENTIFICATION NUMBER B
10 S01	S1a
	S2a
	S2x
11 S04	S3a
	S3x
12 S02	S4a
13 S03	S0
14 P01	P1a
	P1b
15 X01	X
16 Z01	Z
17 R01	R
18 N01	N1a
	N1b
	N1c
	N1d
19 N06	N1x
	N1y
20 N02	N2a
	N2b
21 N07	N2x
	N2y

IDENTIFICATION NUMBER A	IDENTIFICATION NUMBER B
22 N03	N3a
23 N04	N4x
	N4y
	N5x
	N5y
24 N05	N0
25 O01	O1a
	O1b
	O1c
	O1d
26 O05	O2a
	O2b
	O2c
	O2x
27 O02	O2a
	O2b
	O2c
	O2x
28 O03	O4a
	O5a
	O5x
29 O06	O6a
	O7a
	O7x
30 O04	O0

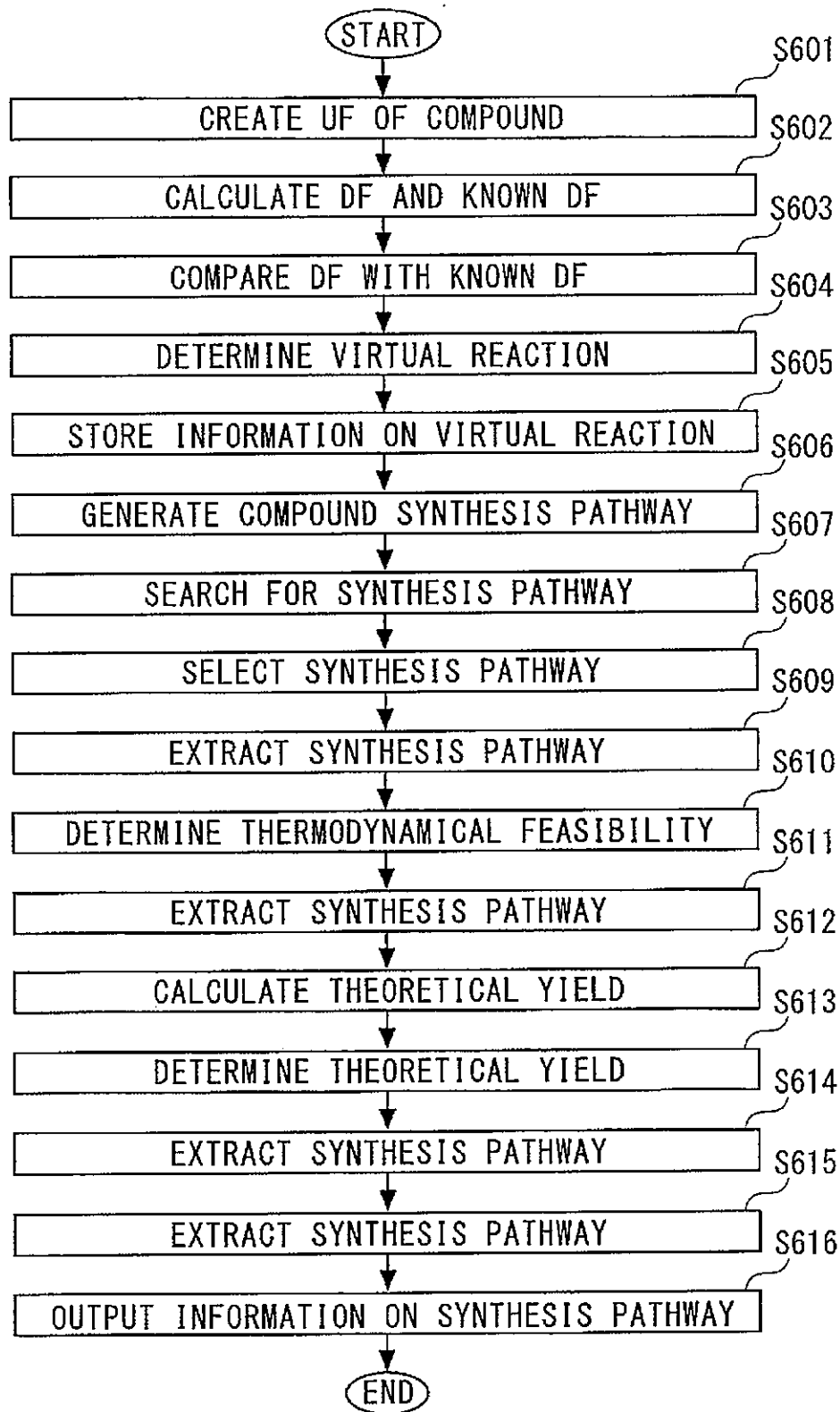
[FIG. 4]

		101	102	101	102	101	102	101	102	101	102
C01	2	C03-N02	0	C06-O06	0	N02-N02	0	O04-O04	0		
C01-C01	1	C03-N03	0	C06-P01	0	N02-N06	0	O04-X01	0		
C01-C02	0	C03-N04	0	C06-R01	0	N02-O01	0	O04-Z01	0		
C01-C03	0	C03-N06	0	C06-S01	0	N02-O02	0	O05	0		
C01-C04	0	C03-N07	0	C06-S02	0	N02-O04	0	O05-O05	0		
C01-C05	0	C03-O01	0	C06-X01	0	N02-O05	0	O05-P01	0		
C01-C06	0	C03-O04	0	C06-Z01	0	N02-O06	0	O05-R01	0		
C01-C08	0	C03-O05	0	C06-C06	0	N02-R01	0	O05-S01	0		
C01-C09	1	C03-O06	0	C06=N02	0	N02-Z01	0	O05-S02	0		
C01-N01	0	C03-R01	0	C06=N04	0	N02=N02	0	O05-Z01	0		
C01-N02	0	C03-S01	0	C06=N07	0	N02=N05	0	O06	2		
C01-N03	0	C03-S02	0	C06=O03	0	N02=O02	0	O06-P01	0		
C01-N04	0	C03-S04	0	C06=O05	0	N02=P01	0	O06-R01	0		
C01-N06	0	C03-X01	0	C06=O06	0	N02=S02	0	O06-S01	0		
C01-N07	0	C03=C03	0	C06=S01	0	N03	0	O06-Z01	0		
C01-O01	1	C03=C07	0	C06=S03	0	N03=N03	0	P01	0		
C01-O04	0	C03=N02	0	C07	0	N03=N05	0	P01-S01	0		
C01-O05	0	C03=N05	0	C07=C07	0	N04	0	P01-X01	0		
C01-O06	0	C03=N06	0	C07-C08	0	N04=N04	0	P01-Z01	0		
C01-P01	0	C03=N07	0	C07=N02	0	N04-O01	0	P01=S03	0		
C01-R01	0	C03=S03	0	C07=O04	0	N04-O04	0	P01=Z01	0		
C01-S01	0	C04	0	C07=S03	0	N04-O05	0	R01	0		
C01-S02	0	C04=C04	0	C08	0	N04-O06	0	R01-S01	0		
C01-S03	0	C04=N03	0	C08-C08	0	N04-P01	0	R01-S02	0		
C01-S04	0	C04=O04	0	C08-C09	0	N04-R01	0	R01-S04	0		
C01-X01	0	C04-C04	0	C08-N01	0	N04-S01	0	R01-X01	0		
C01-Z01	0	C04-C05	0	C08-N02	0	N04-S02	0	R01-Z01	0		
C02	0	C04-C06	0	C08-N03	0	N04-Z01	0	S01	0		
C02-C02	0	C04-C08	0	C08-N04	0	N04=N04	0	S01-S01	0		
C02-C03	0	C04-C09	0	C08-N06	0	N05	0	S01-S02	0		
C02-C04	0	C04-N01	0	C08-N07	0	N05-S02	0	S01-S04	0		
C02-C05	0	C04-O01	0	C08-O01	0	N05=O02	0	S01-Z01	0		
C02-C06	0	C04-R01	0	C08-O04	0	N06	0	S02	0		
C02-C08	0	C04-S01	0	C08-O05	0	N06=N06	0	S02-S03	0		
C02-C09	0	C04-X01	0	C08-O06	0	N06-N07	0	S02-S04	0		
C02-N01	0	C04-Z01	0	C08-P01	0	N06-O01	0	S02-X01	0		
C02-N02	0	C05	0	C08-R01	0	N06-O05	0	S03	0		
C02-N04	0	C05-C05	0	C08-S01	0	N06-P01	0	S04	0		
C02-N06	0	C05-C06	0	C08-S02	0	N06-S01	0	S04-S04	0		
C02-O01	0	C05-C08	0	C08-S04	0	N06-S02	0	X01	0		
C02-O05	0	C05-C09	0	C08-X01	0	N06-Z01	0	X01-X01	0		
C02-O06	0	C05-N01	0	C08-Z01	0	N06=N07	0	X01-Z01	0		
C02-P01	0	C05-N02	0	C09	1	N07	0	Z01	0		
C02-R01	0	C05-N04	0	C09-C09	0	N07=N07	0	Z01-Z01	0		
C02-S01	0	C05-N05	0	C09-N01	0	N07-O04	0	Z01=Z01	0		
C02-S02	0	C05-N06	0	C09-N04	0	N07-O05	0				
C02-S03	0	C05-N07	0	C09-N06	0	N07-S01	0				
C02-S04	0	C05-O01	0	C09-O04	0	N07=N07	0				
C02-X01	0	C05-O05	0	C09-O05	1	N07=O02	0				
C02-Z01	0	C05-R01	0	C09-P01	0	O01	1				
C02=C02	0	C05-S01	0	C09-R01	0	O01-O01	0				
C02=C03	0	C05-S02	0	C09-S01	0	O01-O05	0				
C02=C06	0	C05-S04	0	C09-X01	0	O01-P01	0				
C02=C07	0	C05-X01	0	C09=O06	1	O01-R01	0				
C02=N02	0	C05-Z01	0	N01	0	O01-S02	0				
C02=N07	0	C05=O03	0	N01-N01	0	O01-X01	0				
C02=O04	0	C06	0	N01-N02	0	O01-Z01	0				
C02=R01	0	C06-C06	0	N01-N04	0	O02	0				
C02=S02	0	C06-C08	0	N01-N06	0	O02=P01	0				
C02=S03	0	C06-C09	0	N01-O01	0	O02=S01	0				
C03	0	C06-N01	0	N01-O04	0	O02=S02	0				
C03-C03	0	C06-N02	0	N01-O05	0	O02=S04	0				
C03-C04	0	C06-N03	0	N01-O06	0	O03	0				
C03-C05	0	C06-N04	0	N01-P01	0	O04	0				
C03-C06	0	C06-N06	0	N01-R01	0	O04-O05	0				
C03-C07	0	C06-N07	0	N01-S01	0	O04-P01	0				
C03-C08	0	C06-O01	0	N01-S02	0	O04-S02	0				
C03-C09	0	C06-O04	0	N01-Z01	0	O04-X01	0				
C03-N01	0	C06-O05	0	N02	0	O04-Z01	0				

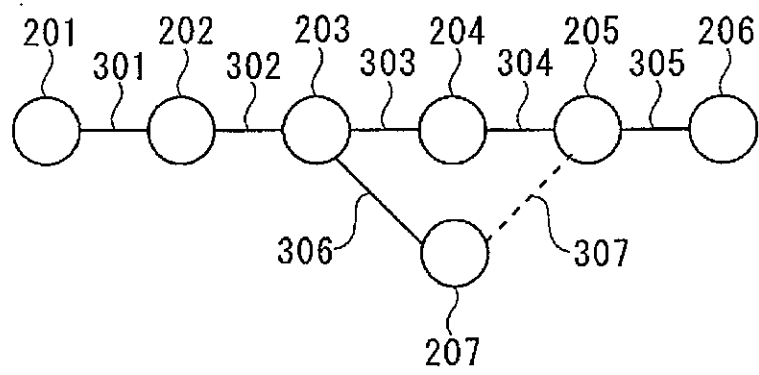
[FIG. 5]



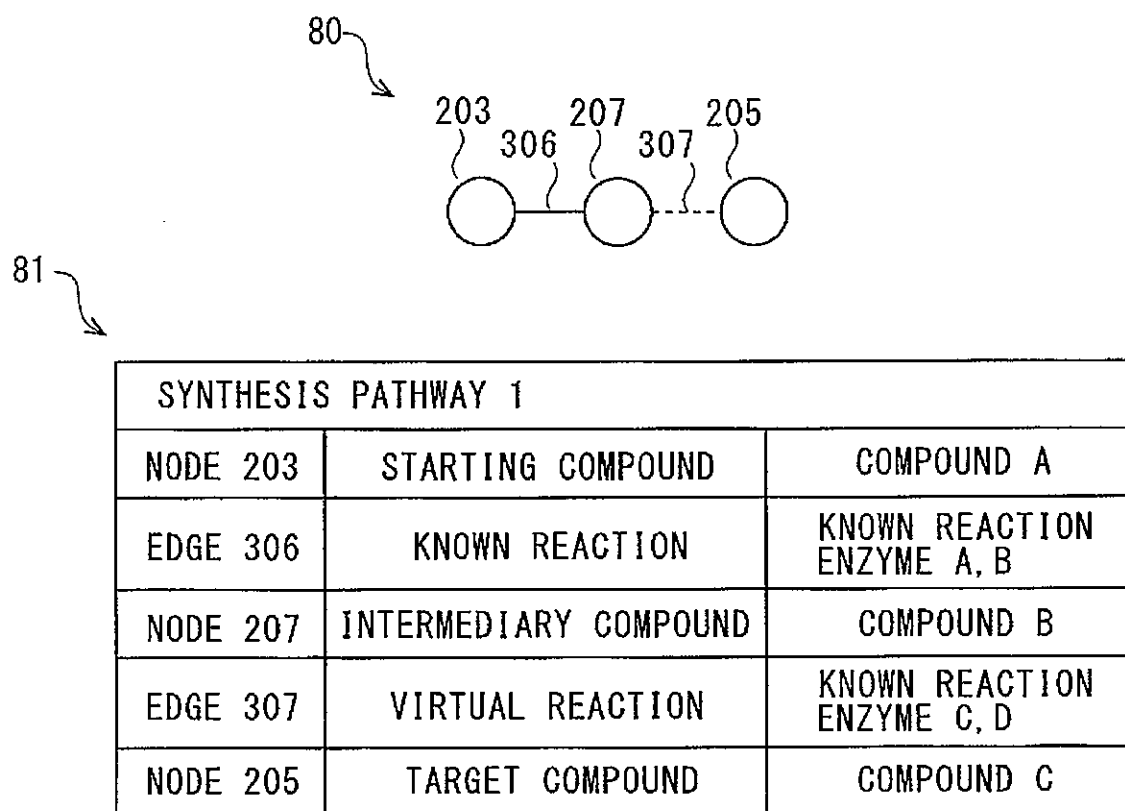
[FIG. 6]



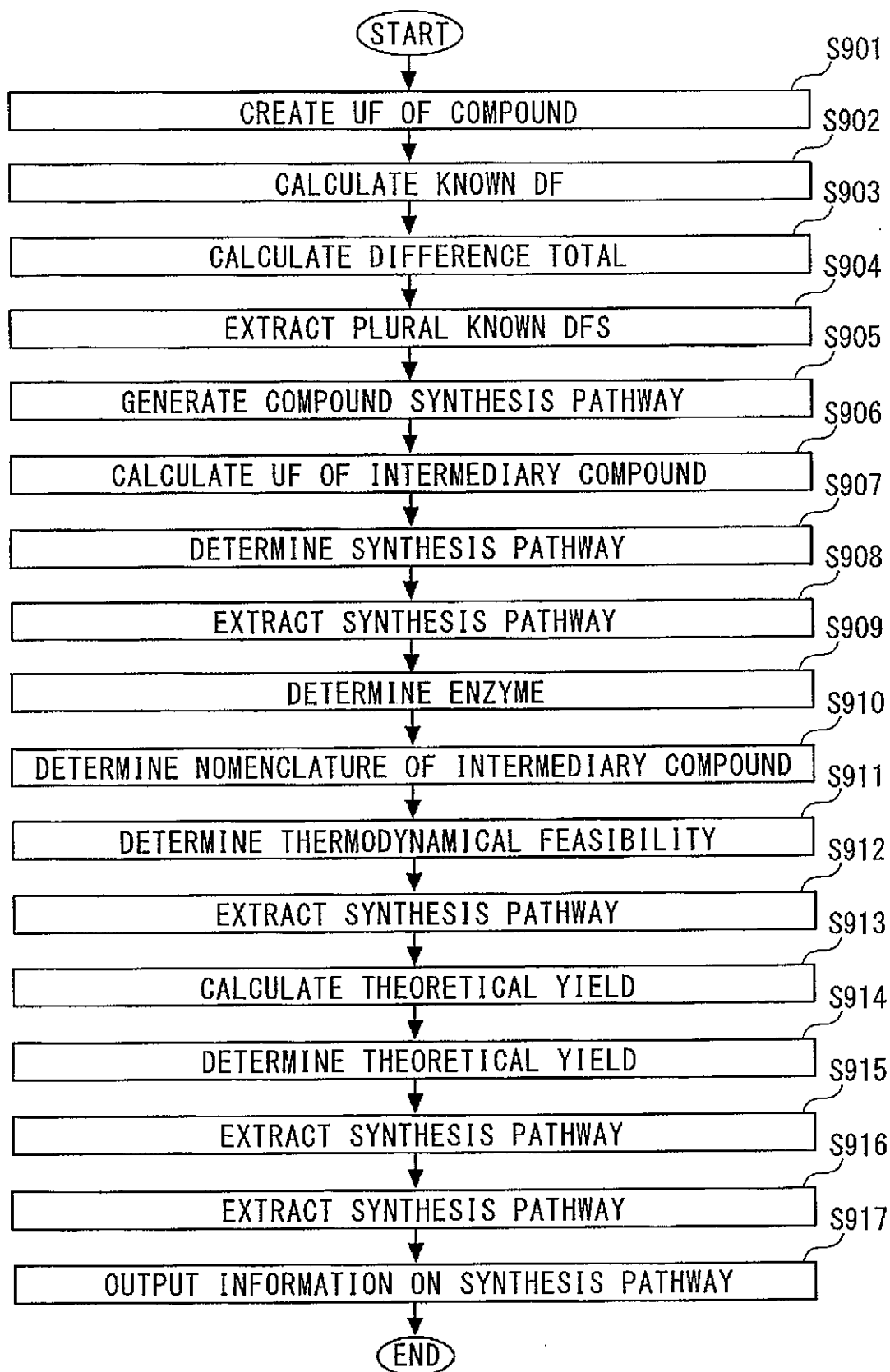
[FIG. 7]



[FIG. 8]



[FIG. 9]



[FIG. 10]

1	STARTING COMPOUND, KNOWN DF1, KNOWN DF2, KNOWN DF3, TARGET COMPOUND
2	STARTING COMPOUND, KNOWN DF1, KNOWN DF3, KNOWN DF2, TARGET COMPOUND
3	STARTING COMPOUND, KNOWN DF2, KNOWN DF1, KNOWN DF3, TARGET COMPOUND
4	STARTING COMPOUND, KNOWN DF2, KNOWN DF3, KNOWN DF1, TARGET COMPOUND
5	STARTING COMPOUND, KNOWN DF3, KNOWN DF1, KNOWN DF2, TARGET COMPOUND
6	STARTING COMPOUND, KNOWN DF3, KNOWN DF2, KNOWN DF1, TARGET COMPOUND

DF COMBINATION GROUP

$$\begin{aligned} \text{KNOWN DF1} + \text{KNOWN DF2} + \text{KNOWN DF3} &= \text{DIFFERENCE TOTAL} \\ &= \text{TARGET COMPOUND DF} - \text{STARTING COMPOUND DF} \end{aligned}$$

[FIG. 11]

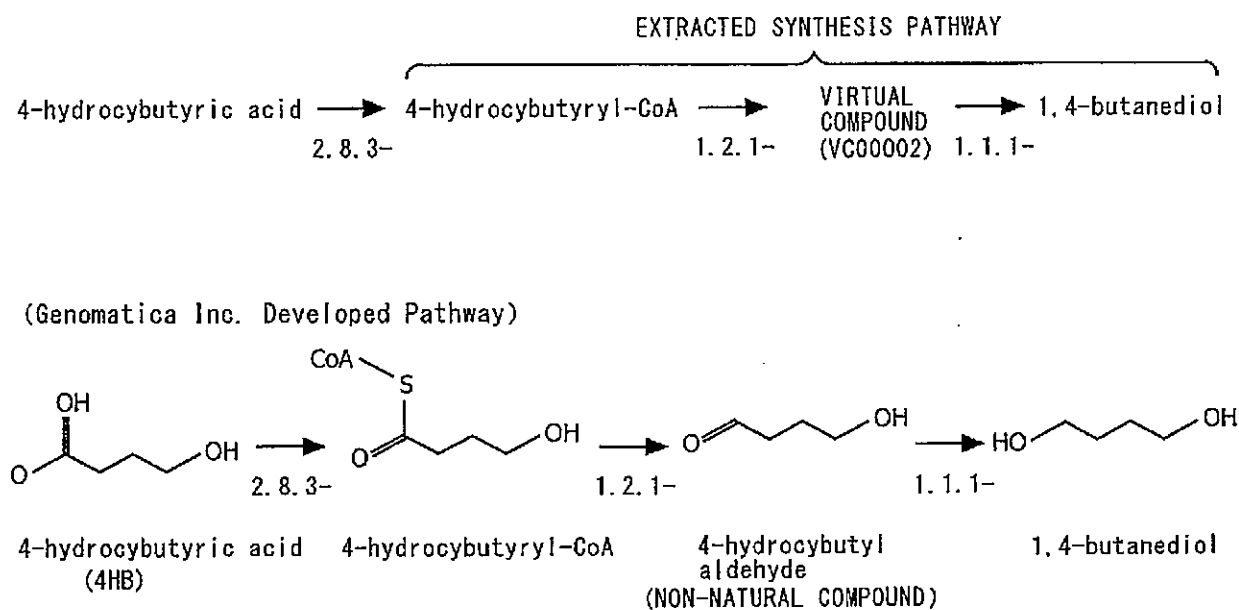
121
↓

STARTING COMPOUND	COMPOUND A	UF1		
	KNOWN REACTION	KNOWN DF1	UF3 - UF4	KNOWN REACTION ENZYME A, B
			UF5 - UF6	KNOWN REACTION ENZYME C, D
INTERMEDIARY COMPOUND A	COMPOUND B	UF14		
	KNOWN REACTION	KNOWN DF2	UF7 - UF8	KNOWN REACTION ENZYME E, F
INTERMEDIARY COMPOUND B	COMPOUND C	UF13		
	VIRTUAL REACTION	KNOWN DF3	UF9 - UF10	KNOWN REACTION ENZYME G, H
			UF11 - UF12	KNOWN REACTION ENZYME I, J
TARGET COMPOUND	COMPOUND D	UF2		

122
↓

STARTING COMPOUND	COMPOUND A	UF1		
	KNOWN REACTION	KNOWN DF1	UF3 - UF4	KNOWN REACTION ENZYME A, B
			UF5 - UF6	KNOWN REACTION ENZYME C, D
INTERMEDIARY COMPOUND A	COMPOUND B	UF14		
	VIRTUAL REACTION	KNOWN DF4	UF15 - UF16	KNOWN REACTION ENZYME E, F
INTERMEDIARY COMPOUND B	VC0001	UF21		
	VIRTUAL REACTION	KNOWN DF5	UF17 - UF18	KNOWN REACTION ENZYME G, H
			UF19 - UF20	KNOWN REACTION ENZYME I, J
TARGET COMPOUND	COMPOUND D	UF2		

[FIG. 12]



[FIG. 13]

