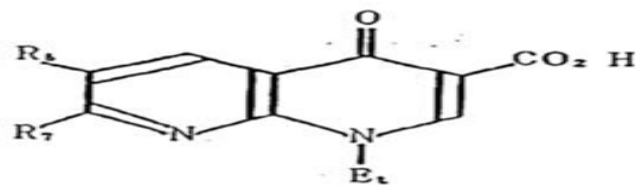
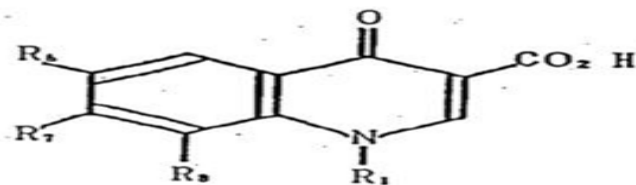

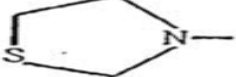


PYRIDONE CARBONIC ACID DERIVATIVES
ANTIBACTERIAL ACTIVITY

John M. Domagala, Lori Doyle Hanna, Carl L. Heifetz, Harland P. Hutt, Thomas F. Mich,
Joseph P. Sanchez, and Marjorie Solomon, *Journal of Medicinal Chemistry*, 29, 394 (1986).



R 6	R 7
F	H
NO ₂	H
F	
H	H ₂ NCH ₂ CH ₂ NH-

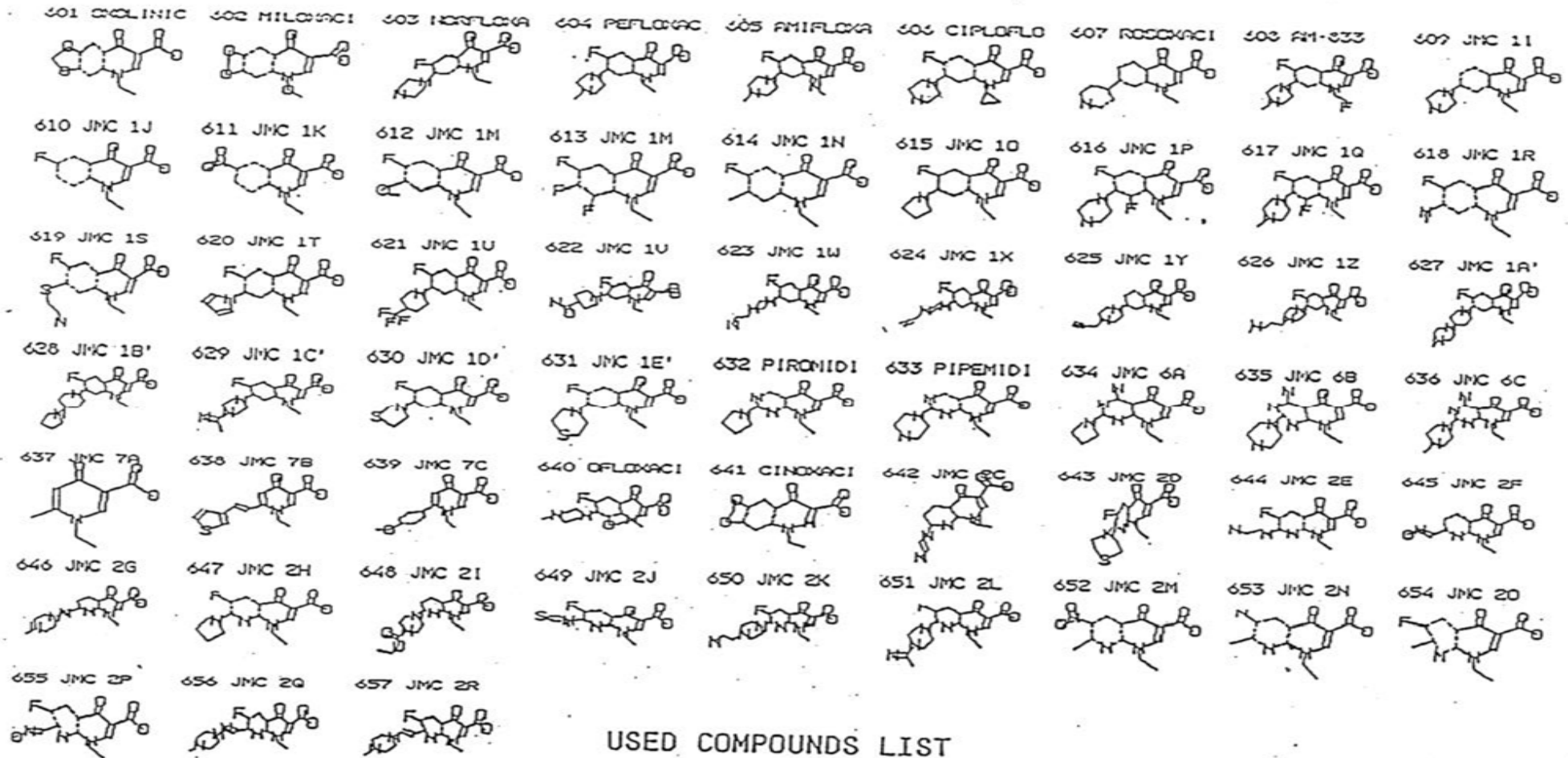
R 6	R 7
F	HON=CH-
NH ₂	CH ₃
F	

— BASIC STRUCTURES OF USED COMPOUNDS —

ANTIBACTERIAL ACTIVITY

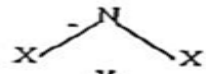
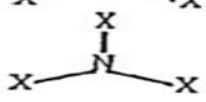
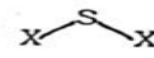
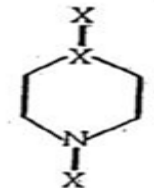
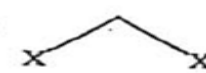
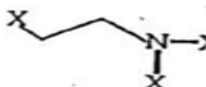

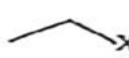
E. coli H560 MIC 0.1 ~ > 100.0 $\mu\text{g}/\text{mL}$

<input type="checkbox"/>	ACTIVE CLASS		
	MIC	0.1~ 6.3 $\mu\text{g}/\text{mL}$	<u>27</u> COMPOUNDS
<input type="checkbox"/>	INACTIVE CLASS		
	MIC	12.5~100.0 $\mu\text{g}/\text{mL}$	<u>30</u> COMPOUNDS



USED COMPOUNDS LIST

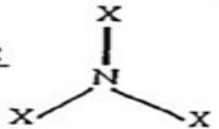
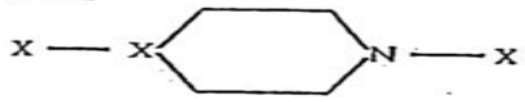


STARTING SUBSTRUCTURE LIST

		NNZ TOTAL				NNZ TOTAL	
<u>SS1</u>		11	11	<u>SS6</u>	$\text{CH}_2\text{---X}$	56	78
<u>SS2</u>		57	112	<u>SS7</u>		6	6
<u>SS3</u>	F---X	36	44	<u>SS8</u>		19	20
<u>SS4</u>		57	213	<u>SS9</u>		35	109
<u>SS5</u>		37	85	<u>SS10</u>		52	53

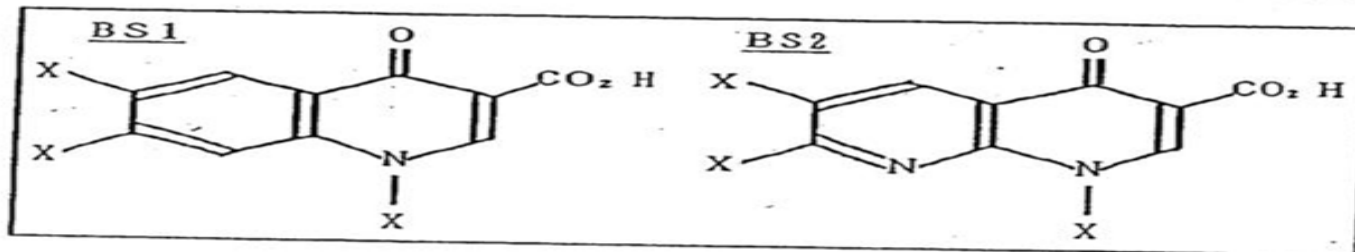
* X MEANS ALL KINDS OF ATOM EXCEPT HYDROGEN

SUBSTRUCTURE LIST USED BY THE RECOM PROGRAM

□ SUBSTRUCTURES HAVING POSITIVE SIGN ON THE DISCRIMINANT FUNCTION

SIGN	SSID	SIGN	SSID
+	<u>SS2</u>	-	<u>SS8</u>
			
+	<u>SS3</u>	+	<u>SS10</u>
			

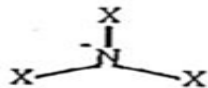
□ BASIC SUBSTRUCTURES OF PYRIDONE DERIVATIVES



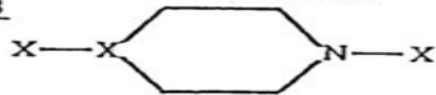
OPERATION FLOW OF GENERATING STRUCTURES
BY USING RECOM PROGRAM

1. CHOOSE SUBSTRUCTURES WHICH HAVE POSITIVE SIGN ON THE DISCRIMINANT FUNCTION

SS2



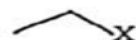
SS8



SS3

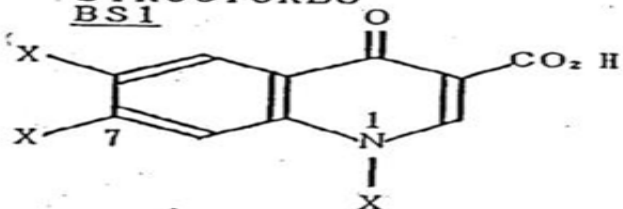


SS10

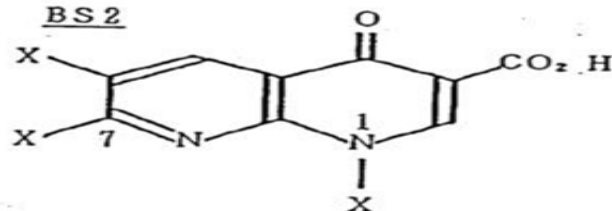


2. DETERMINE BASIC SUBSTRUCTURES WHICH INCLUDE QUINOLINE- AND 1,8-NAPHTHYRIDINE STRUCTURES USED ON THE RECOM PROGRAM WITH OTHER SUBSTRUCTURES

BS1



BS2

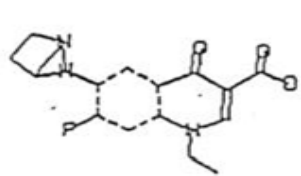


3. GENERATE STRUCTURES BY USING THE RECOM PROGRAM

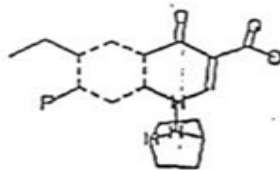
4. DELETE COMPOUNDS BASED ON CHEMICAL REASONS

- ① FLUORINE SHOULD NOT CONNECT NITROGEN ATOM
- ② 1-AND 7-POSITION SHOULD BE LINKED AT LEAST FOUR ATOMS

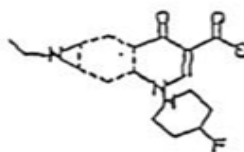
410



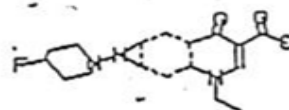
411



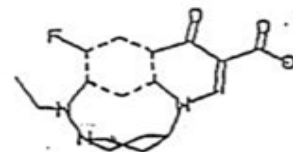
412



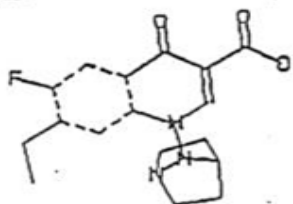
413



414



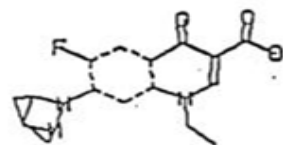
415



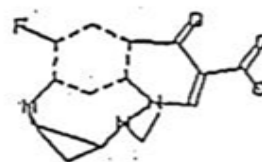
416



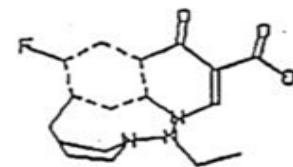
417



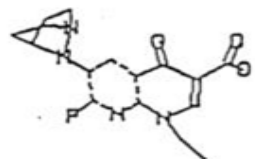
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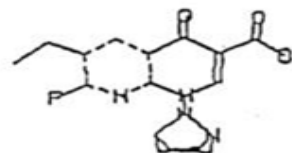
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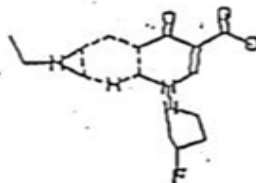
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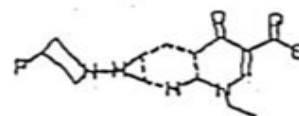
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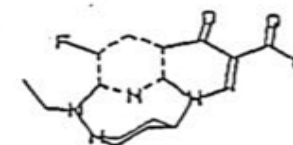
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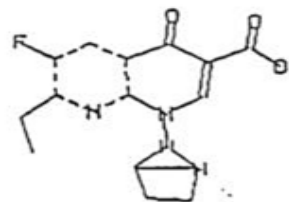
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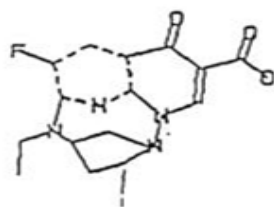
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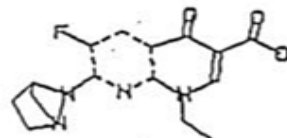
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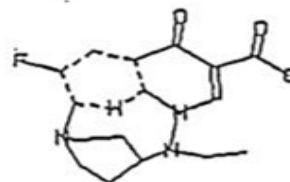
426



427



428



429

