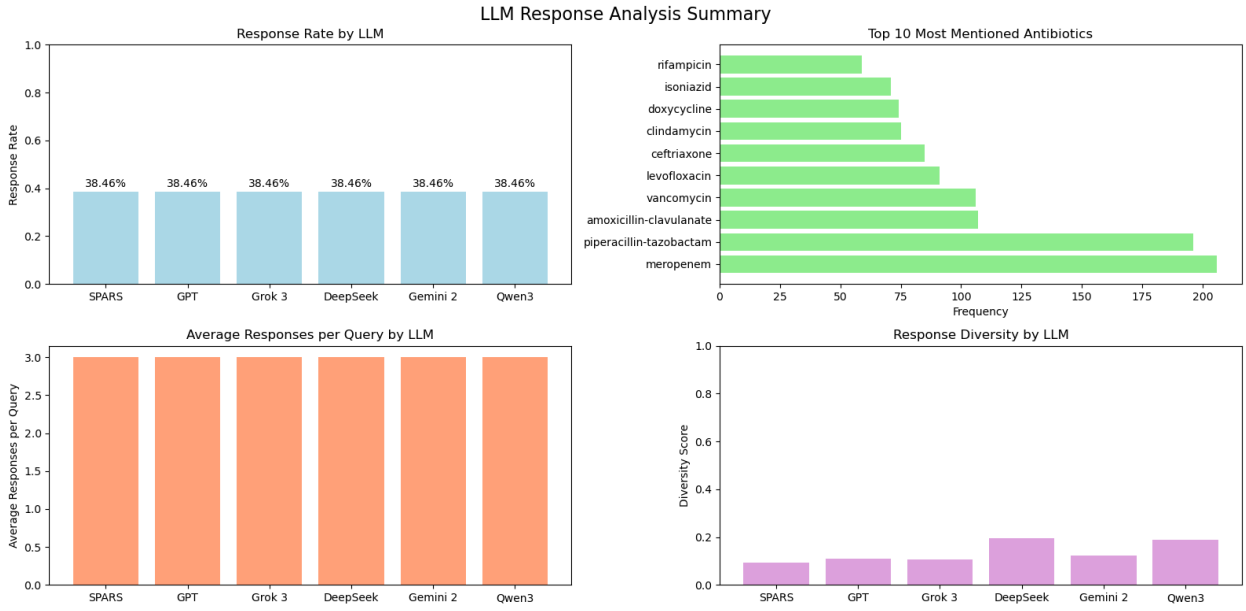
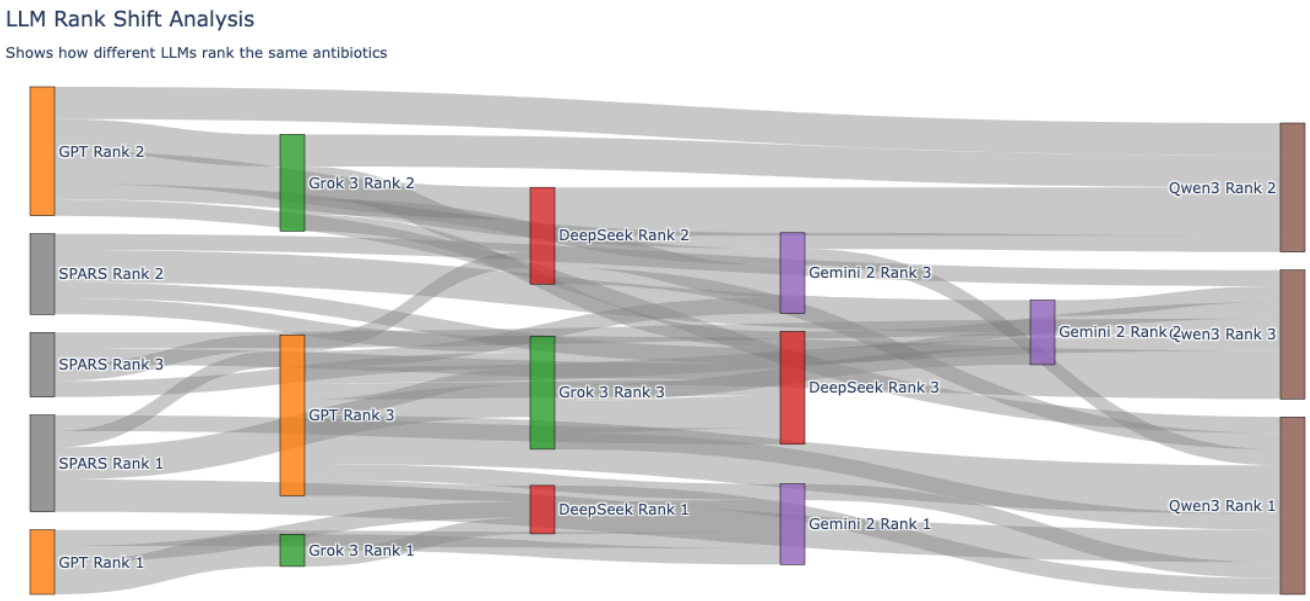
Exploratory Summary:

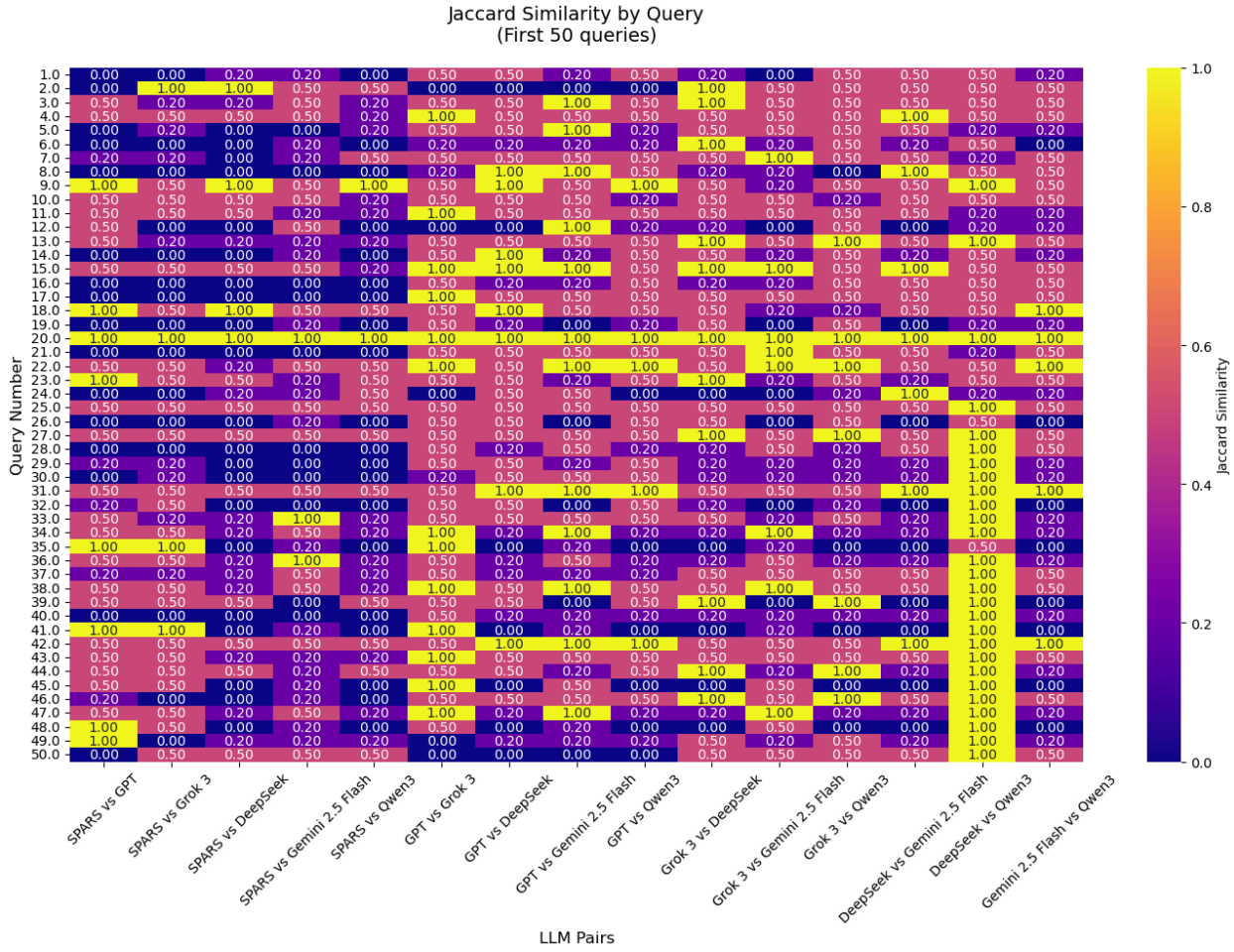


Supplementary figure 1: summarizes the response metrics across the six models: uniform ~38% response rate accounted for by 3 responses/query across all models; perfect query coverage; varying diversity (Qwen3 and Deepseek highest); and top antibiotics mentioned.

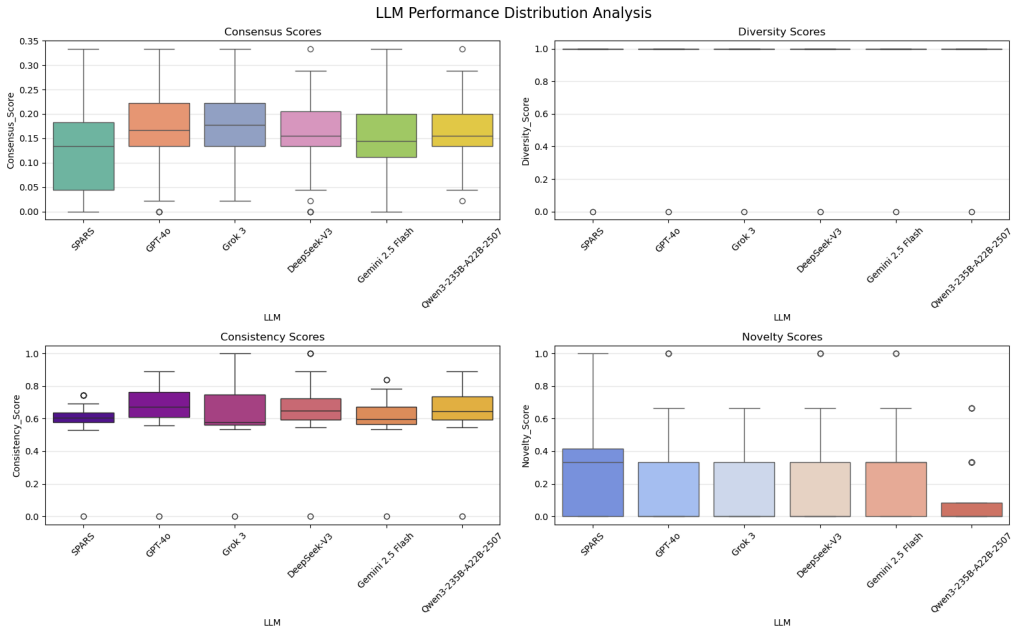


Supplementary figure 2: shows the LLM Rank Shift Analysis, a Sankey diagram illustrating how different LLMs, and SPARS rank the same antibiotics across Rank 1, Rank 2, and Rank 3 positions. The diagram highlights significant rank shifts, with SPARS exhibiting the most

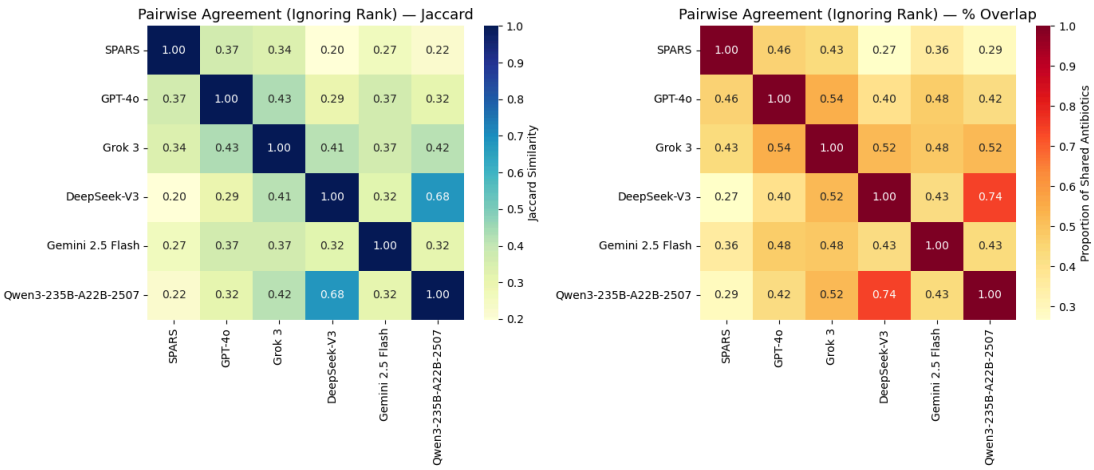
divergent patterns, while DeepSeek and Qwen3 show closer alignment, reflecting their high Jaccard similarity as seen in **supplementary figure 3**.



Supplementary figure 3

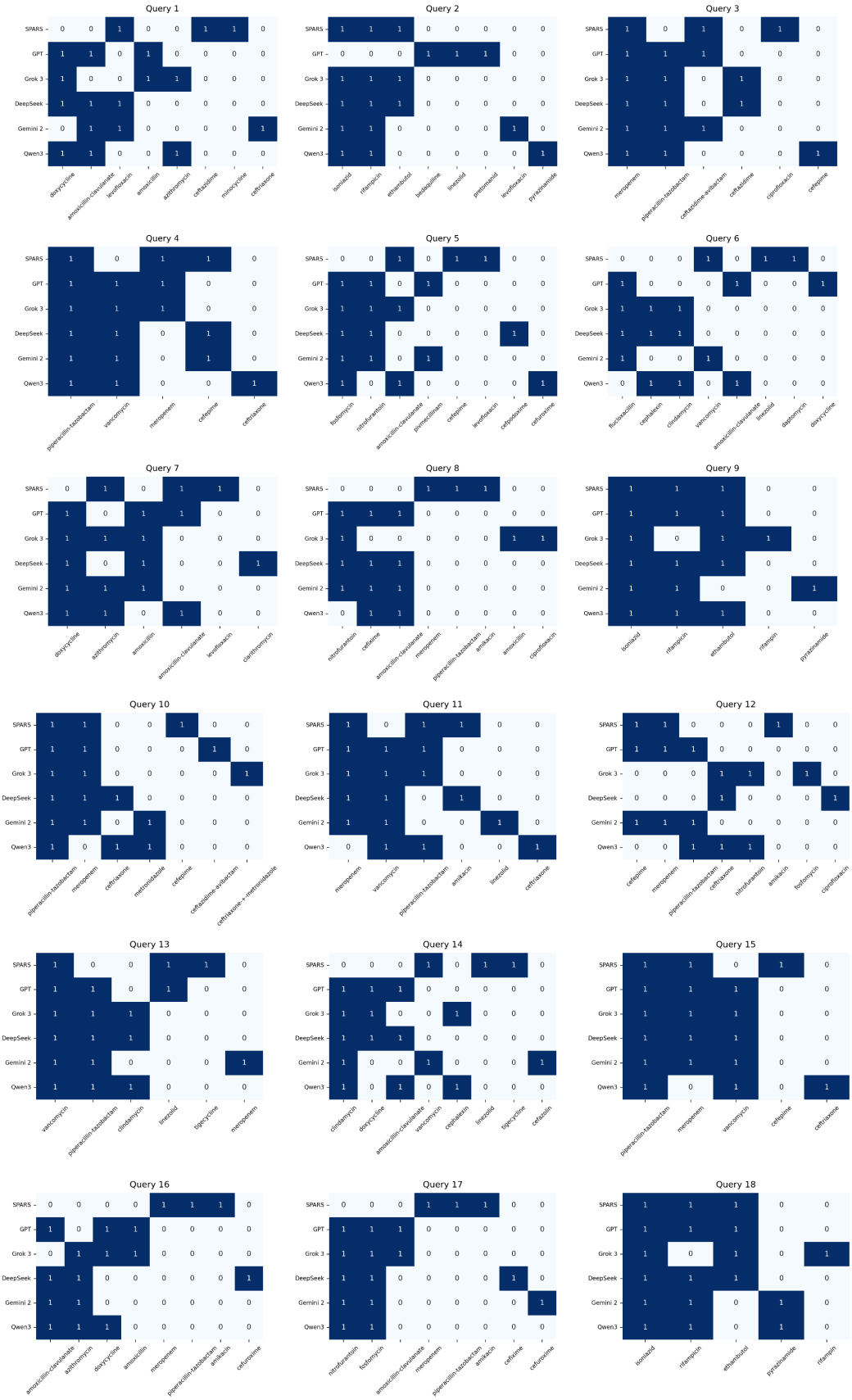


Supplementary figure 4: compares the models across Consensus, Diversity, Consistency, and Novelty scores (the extent to which the model suggests unique or unconventional antibiotic treatments.). Key insights include: GPT-4o and Grok 3 show higher Consensus (medians ~0.15-0.18), indicating better agreement; all models exhibit high Diversity (median 1.0); GPT-4o and Qwen3-235B-A22B-2507 lead in Consistency (medians 0.55-0.75); and SPARS stands out for Novelty (higher median). These findings highlight trade-offs, guiding model choice based on needs like alignment, variety, predictability, or novelty.



Supplementary figure 5: showing pairwise agreement ignoring rank, with Deepseek-V3 and Qwen3 showing the closest similarity while SPARS shows the lowest consistency against other models.

Supplementary figures 4-9: present comparative plots for each of the 100 queries, illustrating the predicted antibiotics across the six models, supporting the identification of controversial antibiotics and the evaluation of the models' reliability across individual cases.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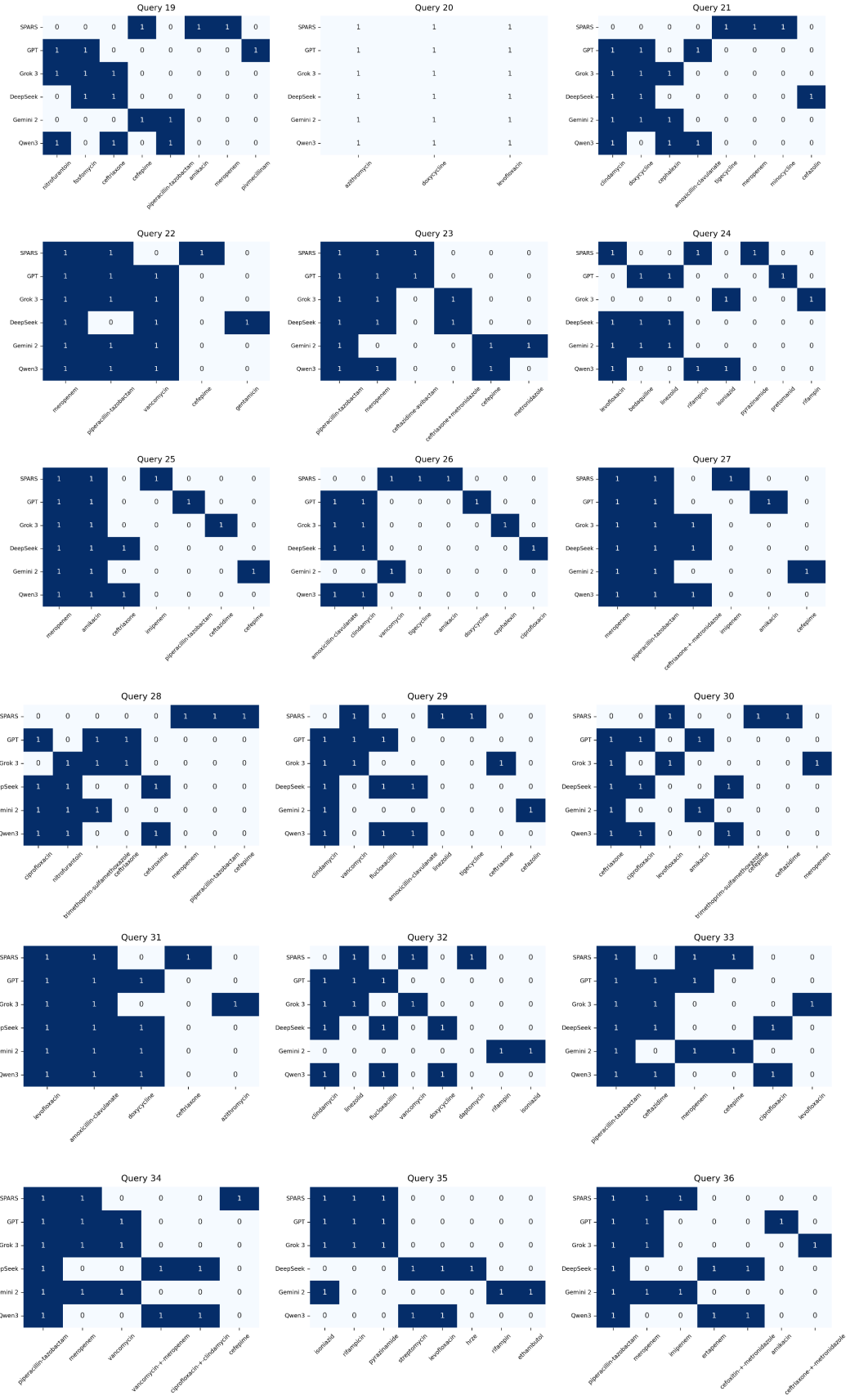
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
doxycycline
amoxicillin-clavulanate
levofloxacin
amoxicillin
azithromycin
ceftazidime
minocycline
ceftriaxone
Query 2
isoniazid
rifampicin
ethambutol
bedaquiline
linezolid
prednisolone
levofloxacin
pyrazinamide
Query 3
meropenem
piperacillin-tazobactam
ceftazidime-avibactam
ceftazidime
ciprofloxacin
cefepime
Query 4
piperacillin-tazobactam
vancomycin
meropenem
cefepime
ceftriaxone
Query 5
fosfomycin
nitrofurantoin
amoxicillin-clavulanate
pivmecillinam
cefepime
levofloxacin
cefpodoxime
cefuroxime
Query 6
flucloxacillin
cephalexin
clindamycin
vancomycin
amoxicillin-clavulanate
linezolid
daptomycin
doxycycline
Query 7
doxycycline
azithromycin
amoxicillin
amoxicillin-clavulanate
levofloxacin
clarithromycin
Query 8
nitrofurantoin
cefixime
amoxicillin-clavulanate
meropenem
piperacillin-tazobactam
amikacin
amoxicillin
ciprofloxacin
Query 9
isoniazid
rifampicin
ethambutol
rifampin
pyrazinamide
Query 10
piperacillin-tazobactam
meropenem
ceftriaxone
metronidazole
cefepime
ceftazidime-avibactam
ceftriaxone + metronidazole
Query 11
meropenem
vancomycin
piperacillin-tazobactam
amikacin
linezolid
ceftriaxone
Query 12
cefepime
meropenem
piperacillin-tazobactam
ceftriaxone
nitrofurantoin
amikacin
fosfomycin
ciprofloxacin
Query 13
vancomycin
piperacillin-tazobactam
clindamycin
linezolid
tigecycline
meropenem
Query 14
clindamycin
doxycycline
amoxicillin-clavulanate
vancomycin
cephalexin
linezolid
tigecycline
ceftaroline
Query 15
piperacillin-tazobactam
meropenem
vancomycin
cefepime
ceftriaxone
Query 16
amoxicillin-clavulanate
azithromycin
doxycycline
amoxicillin
meropenem
piperacillin-tazobactam
amikacin
cefuroxime
Query 17
nitrofurantoin
fosfomycin
amoxicillin-clavulanate
meropenem
piperacillin-tazobactam
amikacin
cefixime
cefuroxime
Query 18
isoniazid
rifampicin
ethambutol
pyrazinamide
rifampin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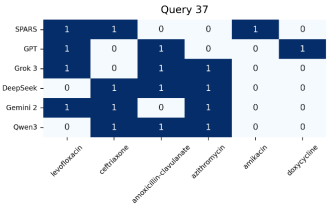
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
nitrofurantoin
fosfomycin
ceftriaxone
cefepime
piperacillin-tazobactam
amikacin
meropenem
pivmecillinam
Query 20
azithromycin
doxycycline
levofloxacin
Query 21
clindamycin
doxycycline
cephalexin
amoxicillin-clavulanate
tigecycline
meropenem
minocycline
cefazolin
Query 22
meropenem
piperacillin-tazobactam
vancomycin
cefepime
gentamicin
Query 23
piperacillin-tazobactam
meropenem
ceftazidime-avibactam
ceftriaxone+metronidazole
cefepime
metronidazole
Query 24
levofloxacin
bedaquiline
linezolid
rifampicin
isoniazid
pyrazinamide
pretomanid
rifampin
Query 25
meropenem
amikacin
ceftriaxone
imipenem
piperacillin-tazobactam
ceftazidime
cefepime
Query 26
amoxicillin-clavulanate
clindamycin
vancomycin
tigecycline
amikacin
doxycycline
cephalexin
ciprofloxacin
Query 27
meropenem
piperacillin-tazobactam
ceftriaxone + metronidazole
imipenem
amikacin
cefepime
Query 28
ciprofloxacin
nitrofurantoin
trimethoprim-sulfamethoxazole
ceftazidime
cefuroxime
meropenem
piperacillin-tazobactam
cefepime
Query 29
clindamycin
vancomycin
flucloxacillin
amoxicillin-clavulanate
linezolid
tigecycline
ceftriaxone
cefazolin
Query 30
ceftriaxone
ciprofloxacin
levofloxacin
amikacin
trimethoprim-sulfamethoxazole
cefepime
ceftazidime
meropenem
Query 31
levofloxacin
amoxicillin-clavulanate
doxycycline
ceftriaxone
azithromycin
Query 32
clindamycin
linezolid
flucloxacillin
vancomycin
doxycycline
daptomycin
rifampin
isoniazid
Query 33
piperacillin-tazobactam
ceftazidime
meropenem
cefepime
ciprofloxacin
levofloxacin
Query 34
piperacillin-tazobactam
meropenem
vancomycin
vancomycin + meropenem
ciprofloxacin + clindamycin
cefepime
Query 35
isoniazid
rifampicin
pyrazinamide
streptomycin
levofloxacin
hrze
rifampin
ethambutol
Query 36
piperacillin-tazobactam
meropenem
imipenem
ertapenem
cefoxitin + metronidazole
amikacin
ceftriaxone + metronidazole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SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
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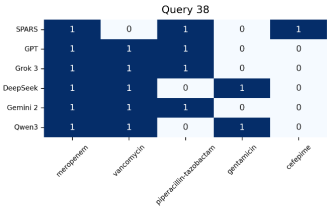
ceftriaxone
amoxicillin-clavulanate
azithromycin
amikacin
doxycycline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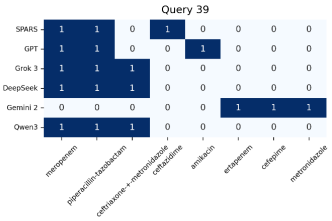
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
vancomycin
piperacillin-tazobactam
gentamicin
cefepime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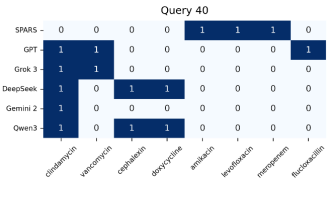
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
ceftriaxone + metronidazole
ceftazidime
amikacin
ertapenem
cefepime
metronidazole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SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
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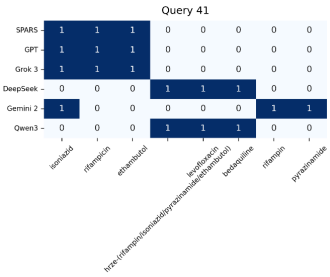
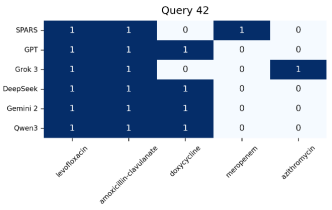
vancomycin
ceftaroline
doxycycline
amikacin
levofloxacin
meropenem
flucloxacillin


Query 41
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
levofloxacin
bedaquiline
rifampin
pyrazinamide
hrze-(rifampin/isoniazid/pyrazinamide/ethambutol)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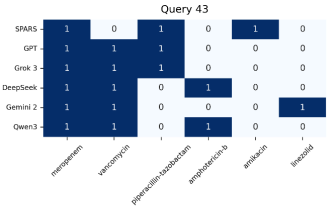
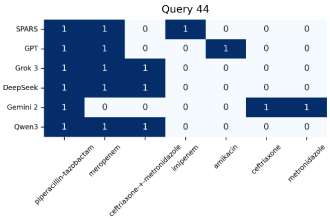
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
levofloxacin
amoxicillin-clavulanate
doxycycline
meropenem
azithromycin


Query 43
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
vancomycin
piperacillin-tazobactam
amphotericin-b
amikacin
linezolid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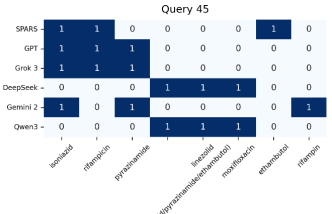
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
ceftriaxone + metronidazole
imipenem
amikacin
ceftriaxone
metronidazole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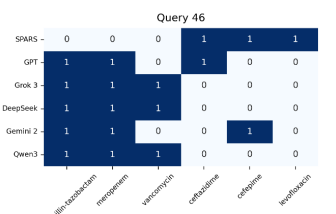
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
pyrazinamide
linezolid
moxifloxacin
ethambutol
rifampin
hrze-(rifampin/isoniazid/pyrazinamide/ethambutol)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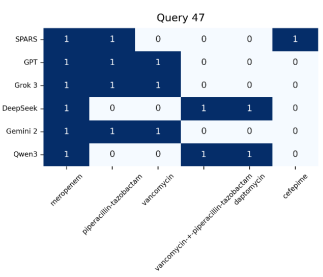
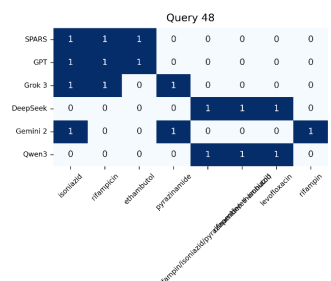
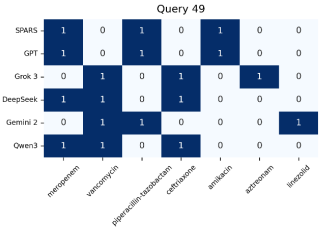
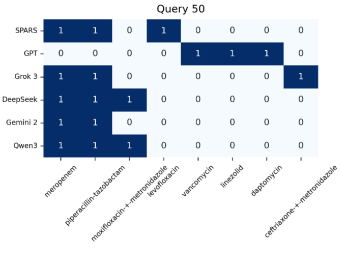
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
vancomycin
ceftazidime
cefepime
levofloxacin


Query 47
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
vancomycin
vancomycin + piperacillin-tazobactam
daptomycin
cefepime


Query 48
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
pyrazinamide
levofloxacin
rifampin


Query 49
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
vancomycin
piperacillin-tazobactam
ceftriaxone
amikacin
aztreonam
linezolid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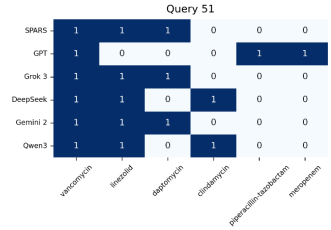
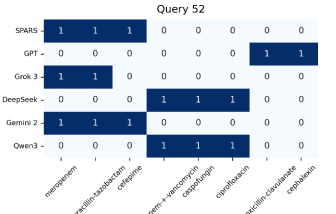
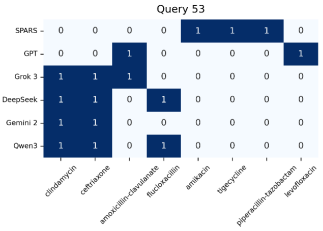
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
moxifloxacin + metronidazole
levofloxacin
vancomycin
linezolid
daptomycin
ceftriaxone + metronidazole


Query 51
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
vancomycin
linezolid
daptomycin
clindamycin
piperacillin-tazobactam
meropenem


Query 52
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
cefepime
meropenem + vancomycin
caspofungin
ciprofloxacin
amoxicillin-clavulanate
cephalexin


Query 53
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
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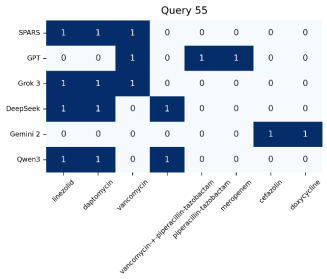
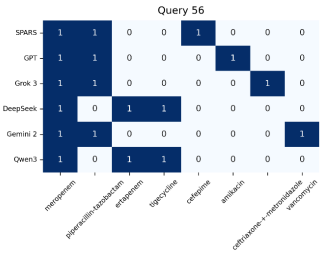
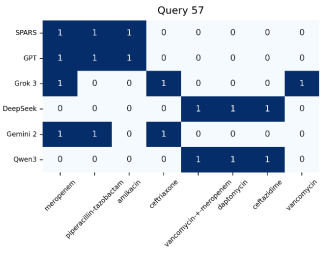
ceftriaxone
amoxicillin-clavulanate
flucloxacillin
amikacin
tigecycline
piperacillin-tazobactam
levofloxacin


Query 54
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
levofloxacin
piperacillin-tazobactam
meropenem
amikacin
amoxicillin-clavulanate
ceftriaxone + azithromycin
imipenem
ceftriaxone


Query 55
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
linezolid
daptomycin
vancomycin
vancomycin + piperacillin-tazobactam
piperacillin-tazobactam
meropenem
cefazolin
doxycycline


Query 56
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
ertapenem
tigecycline
cefepime
amikacin
ceftriaxone + metronidazole
vancomycin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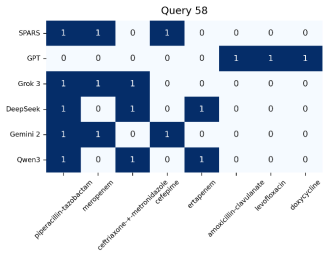
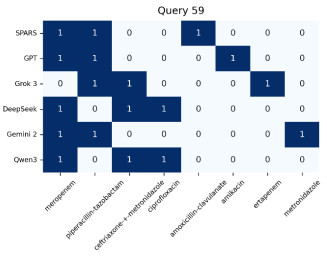
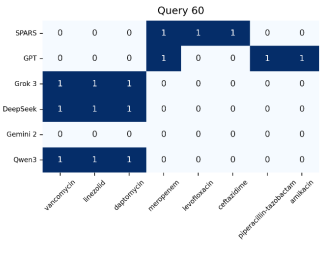
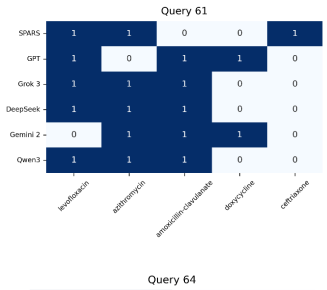
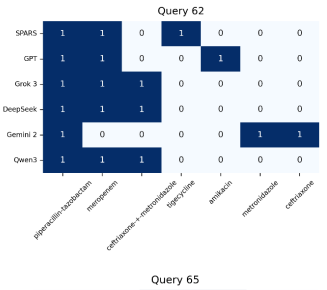
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
amikacin
ceftriaxone
vancomycin + meropenem
daptomycin
ceftazidime
vancomycin

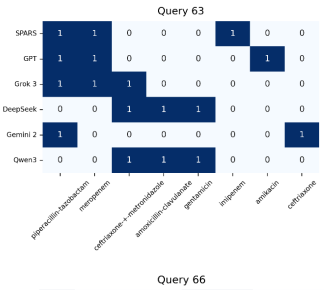

Query 58
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
ceftriaxone + metronidazole
cefepime
ertapenem
amoxicillin-clavulanate
levofloxacin
doxycycline

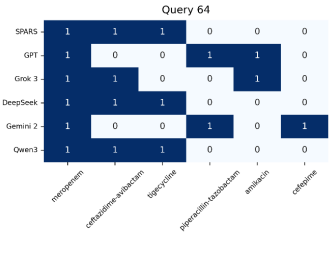

Query 59
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
ceftriaxone + metronidazole
ciprofloxacin
amoxicillin-clavulanate
amikacin
ertapenem
metronidazole

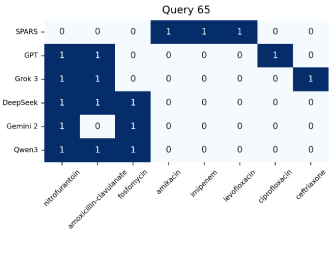

Query 60
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
vancomycin
linezolid
daptomycin
meropenem
levofloxacin
ceftazidime
piperacillin-tazobactam
amikacin

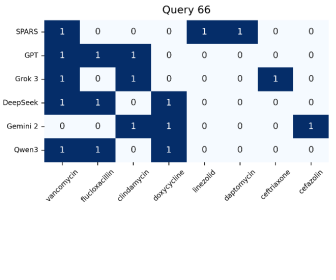

Query 61
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
levofloxacin
azithromycin
amoxicillin-clavulanate
doxycycline
ceftriaxone

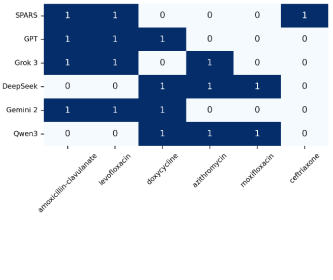

Query 62
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
ceftriaxone + metronidazole
tigecycline
amikacin
metronidazole
ceftriaxone

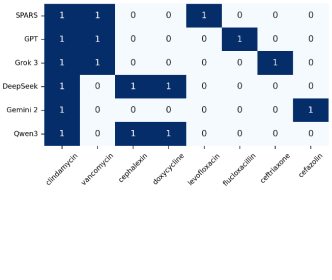

Query 63
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
ceftriaxone + metronidazole
amoxicillin-clavulanate
gentamicin
imipenem
amikacin
ceftriaxone

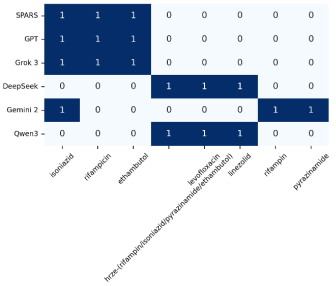

Query 64
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
ceftazidime-avibactam
tigecycline
piperacillin-tazobactam
amikacin
cefepime

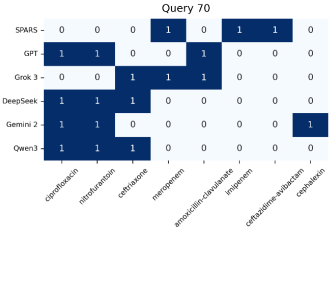

Query 65
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
nitrofurantoin
amoxicillin-clavulanate
fosfomycin
amikacin
imipenem
levofloxacin
ciprofloxacin
ceftriaxone

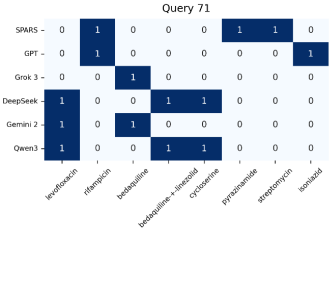

Query 66
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
vancomycin
flucloxacillin
clindamycin
doxycycline
linezolid
daptomycin
ceftriaxone
cefazolin

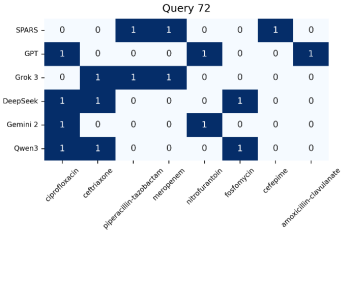

Query 67
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
amoxicillin-clavulanate
levofloxacin
doxycycline
azithromycin
moxifloxacin
ceftriaxone

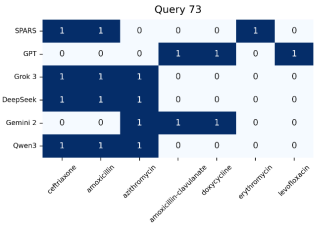

Query 68
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
clindamycin
vancomycin
cephalexin
doxycycline
levofloxacin
flucloxacillin
ceftriaxone
cefazolin

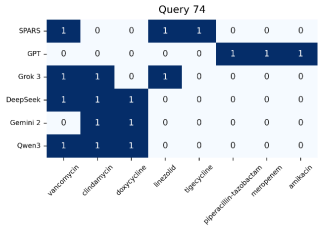

Query 69
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
levofloxacin
hrze (rifampin/isoniazid/pyrazinamide/ethambutol)
linezolid
rifampin
pyrazinamide

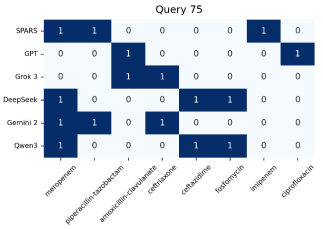

Query 70
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
ciprofloxacin
nitrofurantoin
ceftriaxone
meropenem
amoxicillin-clavulanate
imipenem
ceftazidime-avibactam
cephalexin

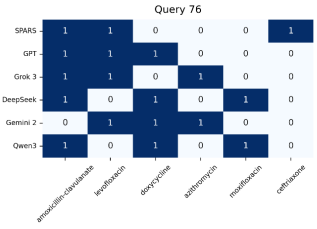

Query 71
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
levofloxacin
rifampicin
bedaquiline
bedaquiline + linezolid
cycloserine
pyrazinamide
streptomycin
isoniazid

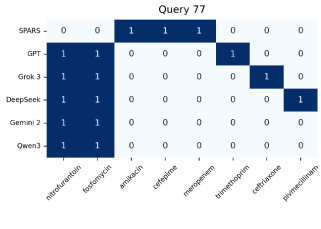

Query 72
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
ciprofloxacin
ceftriaxone
piperacillin-tazobactam
meropenem
nitrofurantoin
fosfomycin
cefepime
amoxicillin-clavulanate

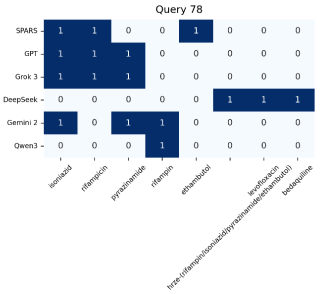

Query 73
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
ceftriaxone
amoxicillin
azithromycin
amoxicillin-clavulanate
doxycycline
erythromycin
levofloxacin

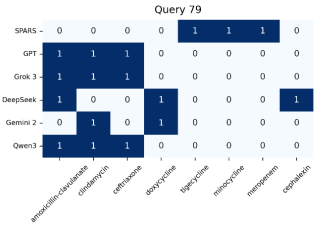

Query 74
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
vancomycin
clindamycin
doxycycline
linezolid
tigecycline
piperacillin-tazobactam
meropenem
amikacin

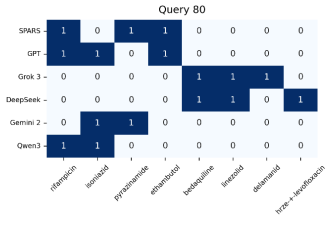

Query 75
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
amoxicillin-clavulanate
ceftriaxone
ceftazidime
fosfomycin
imipenem
ciprofloxacin

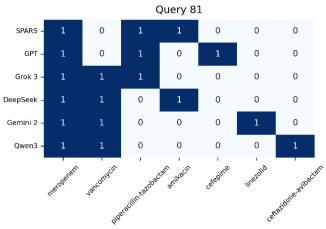

Query 76
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
amoxicillin-clavulanate
levofloxacin
doxycycline
azithromycin
moxifloxacin
ceftriaxone

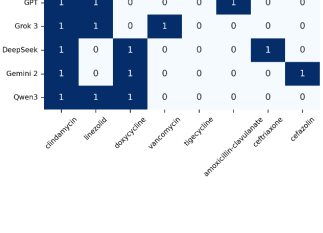

Query 77
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
nitrofurantoin
fosfomycin
amikacin
cefepime
meropenem
trimethoprim
ceftriaxone
piivmecillinam

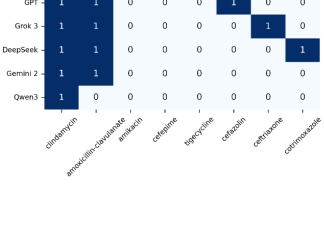

Query 78
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
pyrazinamide
rifampin
ethambutol
levofloxacin
hrze-(rifampin/isoniazid/pyrazinamide/ethambutol)
bedaquiline


Query 79
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
amoxicillin-clavulanate
clindamycin
ceftriaxone
doxycycline
tigecycline
minocycline
meropenem
cephalexin

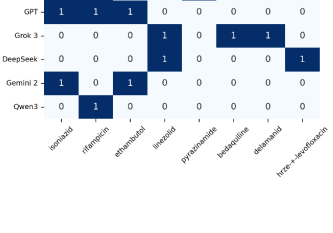

Query 80
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
rifampicin
isoniazid
pyrazinamide
ethambutol
bedaquiline
linezolid
delamanid
hrze-+-levofloxacin

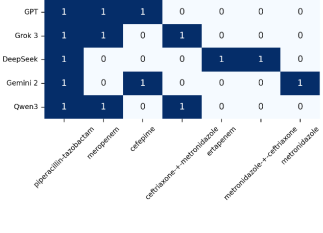

Query 81
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
vancomycin
piperacillin-tazobactam
amikacin
cefepime
linezolid
ceftazidime-avibactam

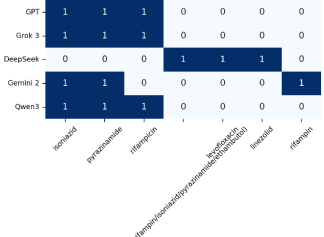

Query 82
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
clindamycin
linezolid
doxycycline
vancomycin
tigecycline
amoxicillin-clavulanate
ceftriaxone
cefepime

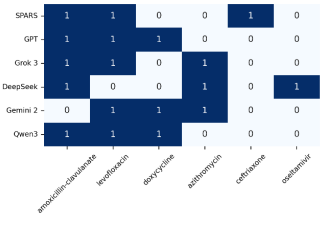

Query 83
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
clindamycin
amoxicillin-clavulanate
amikacin
cefepime
tigecycline
cefazolin
ceftriaxone
cotrimoxazole

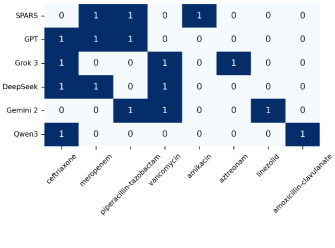

Query 84
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
nitrofurantoin
fosfomycin
ceftriaxone
amikacin
meropenem
piperacillin-tazobactam
levofloxacin
amoxicillin-clavulanate

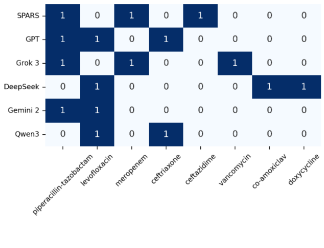

Query 85
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
linezolid
pyrazinamide
bedaquiline
delamanid
hrze-+-levofloxacin

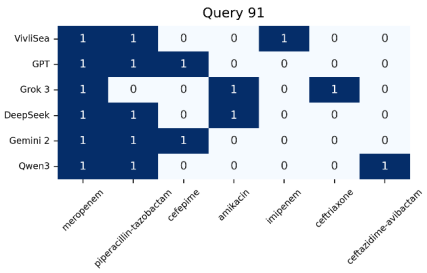

Query 86
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
cefepime
ceftriaxone-+-metronidazole
ertapenem
metronidazole-+-ceftriaxone
metronidazole

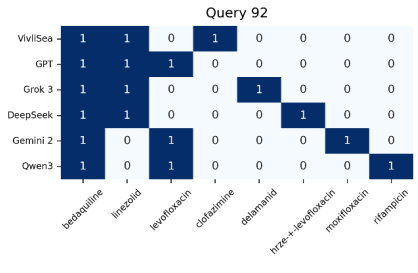

Query 87
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
pyrazinamide
rifampicin
levofloxacin
hrze-(rifampin/isoniazid/pyrazinamide/ethambutol)
linezolid
rifampin

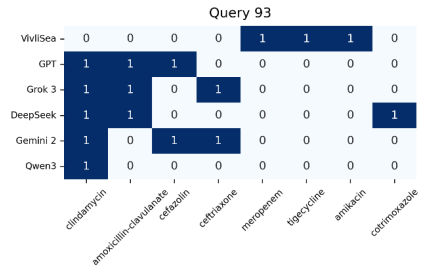

Query 88
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
amoxicillin-clavulanate
levofloxacin
doxycycline
azithromycin
ceftriaxone
oseltamivir

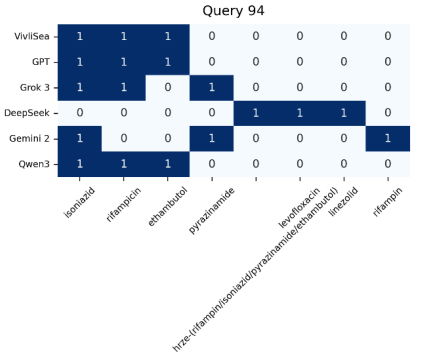

Query 89
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
ceftriaxone
meropenem
piperacillin-tazobactam
vancomycin
amikacin
aztreonam
linezolid
amoxicillin-clavulanate

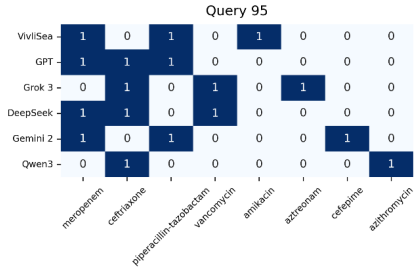

Query 90
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
levofloxacin
meropenem
ceftriaxone
ceftazidime
vancomycin
co-amoxiclav
doxycycline

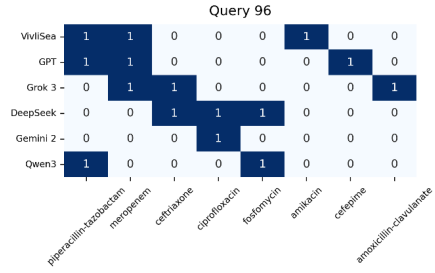

Query 91
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
cefepime
amikacin
imipenem
ceftriaxone
ceftazidime-avibactam

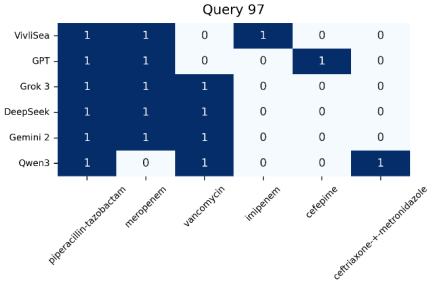

Query 92
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
bedaquiline
linezolid
levofloxacin
clofazimine
delamanid
hrze-+-levofloxacin
moxifloxacin
rifampicin

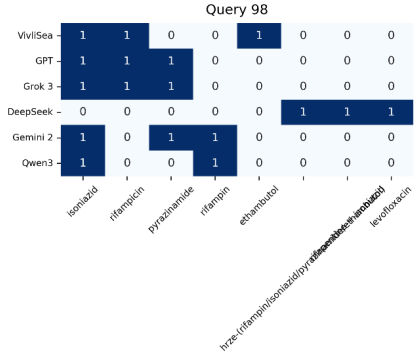

Query 93
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
clindamycin
amoxicillin-clavulanate
cefazolin
ceftriaxone
meropenem
tigecycline
amikacin
cotrimoxazole

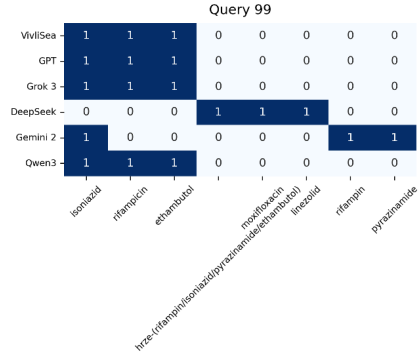

Query 94
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
pyrazinamide
levofloxacin
hrze-(rifampin/isoniazid/pyrazinamide/ethambutol)
linezolid
rifampin

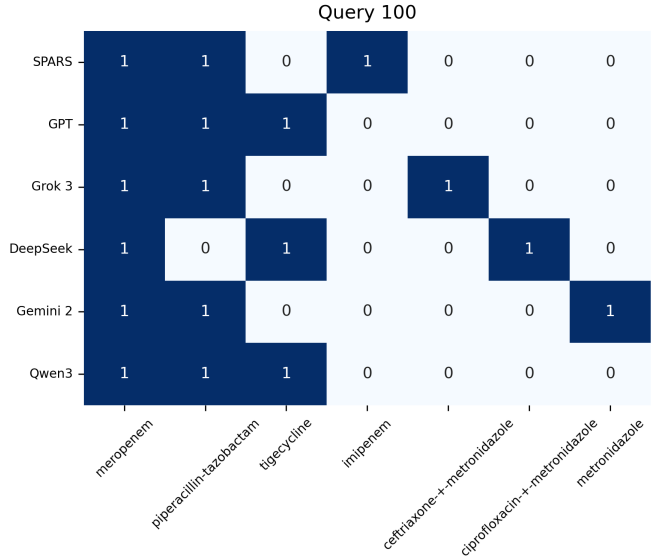

Query 95
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
ceftriaxone
piperacillin-tazobactam
vancomycin
amikacin
aztreonam
cefepime
azithromycin


Query 96
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
ceftriaxone
ciprofloxacin
fosfomycin
amikacin
cefepime
amoxicillin-clavulanate


Query 97
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
piperacillin-tazobactam
meropenem
vancomycin
imipenem
cefepime
ceftriaxone-+-metronidazole


Query 98
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
pyrazinamide
rifampin
ethambutol
levofloxacin


Query 99
VivliSea
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
isoniazid
rifampicin
ethambutol
moxifloxacin
linezolid
rifampin
pyrazinamide


Query 100
SPARS
GPT
Grok 3
DeepSeek
Gemini 2
Qwen3
meropenem
piperacillin-tazobactam
tigecycline
imipenem
ceftriaxone-+-metronidazole
ciprofloxacin-+-metronidazole
metronidazole

Agreement Group	Total Agreements	Queries Involved	Top Antibiotics Agreed On
SPARS, GPT, Grok 3, DeepSeek, Gemini 2.5, Qwen3	38	32	Meropenem: 12; Piperacillin-Tazobactam: 12; Levofloxacin: 3; Isoniazid: 2; Vancomycin: 2
DeepSeek, Qwen3	27	23	Levofloxacin: 4; Doxycycline: 3; Ciprofloxacin: 3; Fosfomycin: 3; Ceftriaxone: 2
GPT, Grok 3, DeepSeek, Gemini 2.5, Qwen3	27	24	Clindamycin: 7; Vancomycin: 6; Nitrofurantoin: 4; Piperacillin-Tazobactam: 3; Fosfomycin: 3
SPARS, GPT, Grok 3	19	16	Rifampicin: 7; Meropenem: 3; Vancomycin: 3; Ethambutol: 2; Piperacillin-Tazobactam: 2
Grok 3, DeepSeek, Qwen3	19	17	Ceftriaxone + Metronidazole: 7 Ceftriaxone: 5; Clindamycin: 2; Vancomycin: 2; Linezolid: 1
SPARS, GPT, Grok 3, Gemini 2.5	19	18	Isoniazid: 6; Piperacillin-Tazobactam: 6; Meropenem: 3; Levofloxacin: 3; Amoxicillin-Clavulanate: 1
GPT, DeepSeek, Gemini 2.5, Qwen3	13	12	Doxycycline: 4; Amoxicillin-Clavulanate: 3; Ciprofloxacin: 3; Nitrofurantoin: 1; Fosfomycin: 1
Grok 3, DeepSeek, Gemini 2.5, Qwen3	11	10	Azithromycin: 3; Vancomycin: 3; Clindamycin: 2; Nitrofurantoin: 1; Ceftriaxone: 1
SPARS, GPT	10	9	Amikacin: 3; Ethambutol: 2; Meropenem: 2; Linezolid: 1; Ceftazidime: 1
SPARS, Gemini 2.5	10	10	Cefepime: 5; Vancomycin: 3; Piperacillin-Tazobactam: 1; Pyrazinamide: 1

Supplementary Table 1: outlines agreements among models on antibiotic recommendations, with the six-model group leading at 38 agreements across 32 queries, favoring meropenem and piperacillin-tazobactam. Smaller groups (2-5 models) show 10-27 agreements, highlighting consensus on various antibiotics based on different scenarios.

Models	Agreements	Percentage
Grok 3	247	66.6%
GPT	237	63.9%
Qwen3	229	61.7%
DeepSeek V3	221	59.6%
Gemini 2.5	207	55.8%
SPARS	183	49.3%

Supplementary Table 2: shows agreement counts and percentages for six models, with Grok 3 (66.6%) leading and SPARS (49.3%) trailing in consistency.

Number of Models Agreeing	Instances
2	101
3	94
4	78
5	60
6	38

Supplementary Table 3: shows the number of models agreeing (2 to 6) on antibiotic predictions.