

# Non-neutropenic animal models of IPA – RAT

Peter Warn  
The University of Manchester

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INVASIVE ASPERGILLOSIS ANIMAL MODELS

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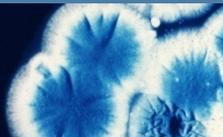
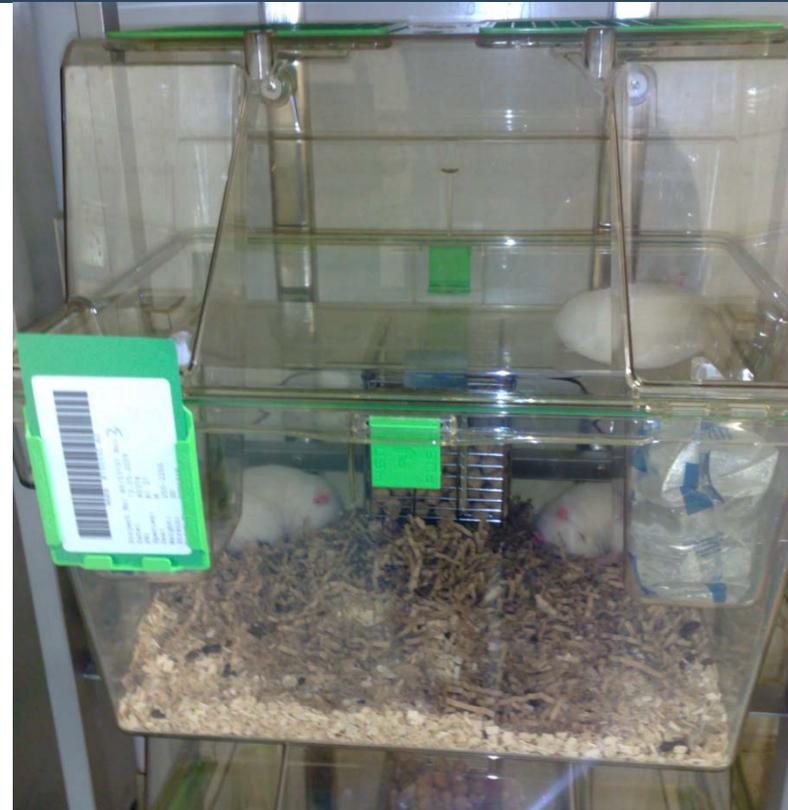
ASPERGILLUS TECHNOLOGY CONSORTIUM



# Basic Parameters of the Rat Model

- ✓ 250-300g Male Sprague Dawley Rats
- ✓ Housed in autoclaved HEPA filter cages with sterile food and water

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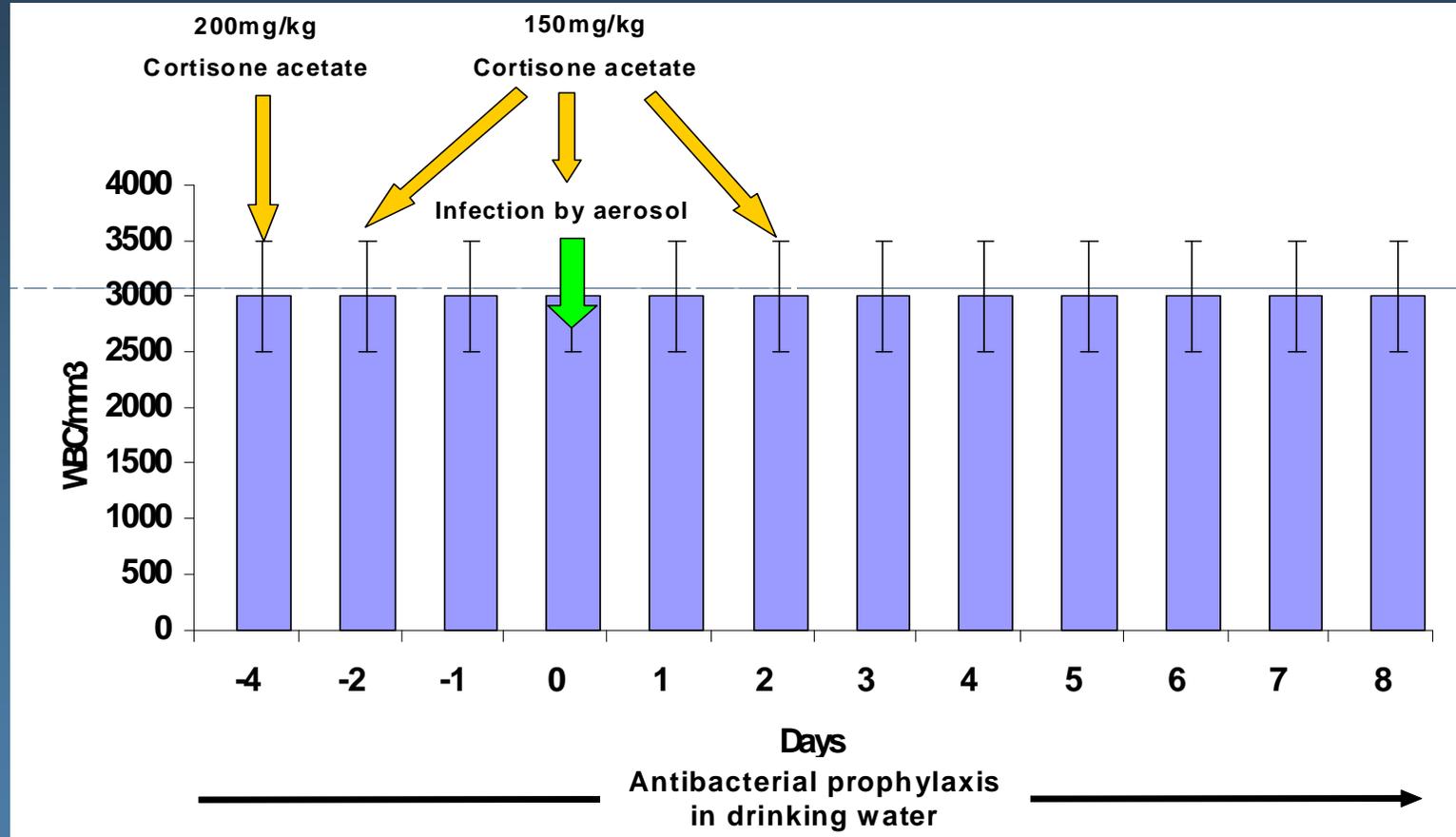


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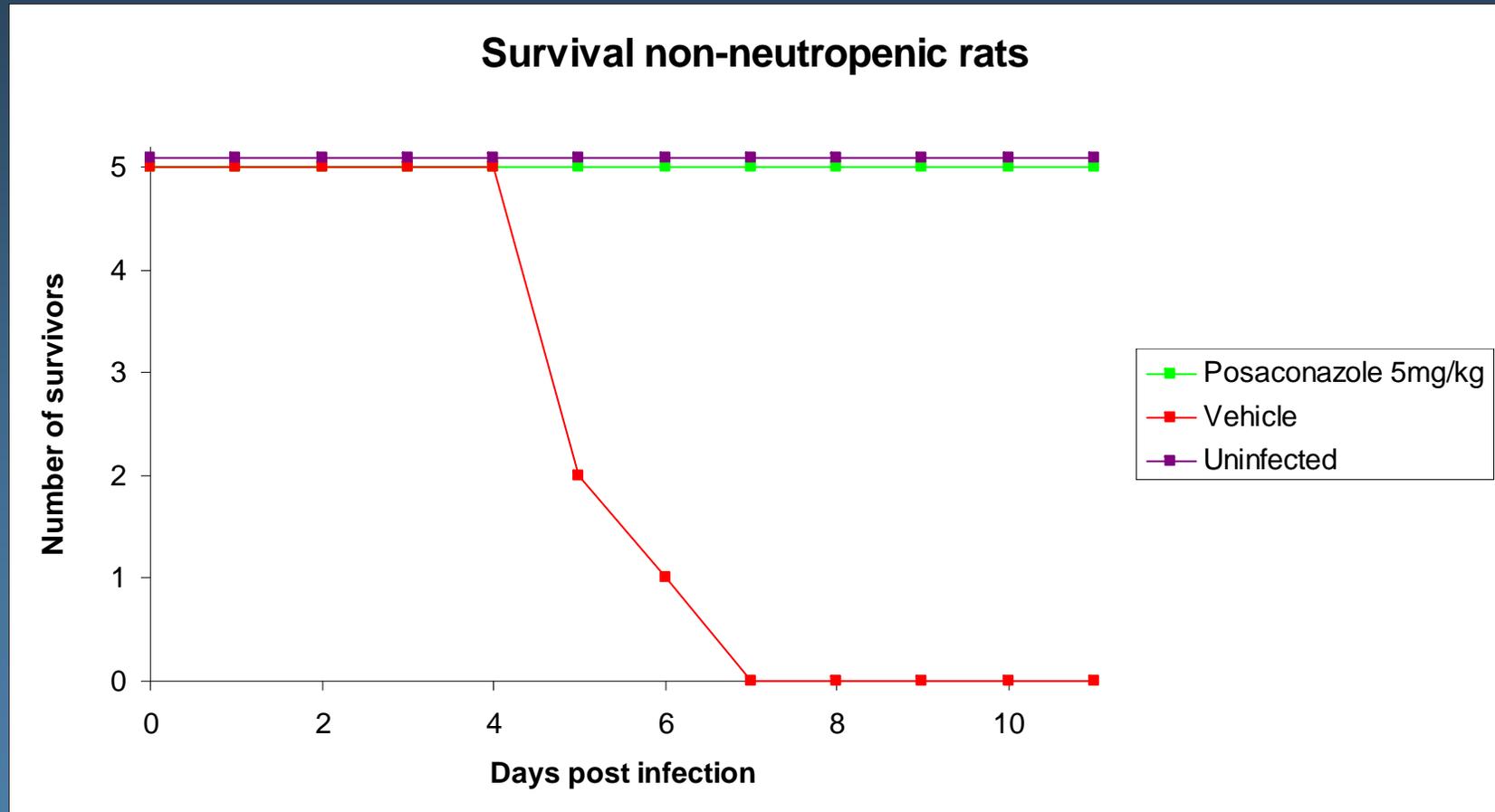
- ✓ 250-300g Male Sprague Dawley Rats
- ✓ Housed in autoclaved HEPA filter cages with sterile food and water
- ✓ Administered Baytril (enrofloxacin) prophylaxis in drinking water at 5ppm starting on day -5
- ✓ Infection by aerosol on day 0 with *A. fumigatus* A1163
- ✓ Endpoints include weight loss (>25%), respiratory distress, bloody nasal discharge, hypothermia



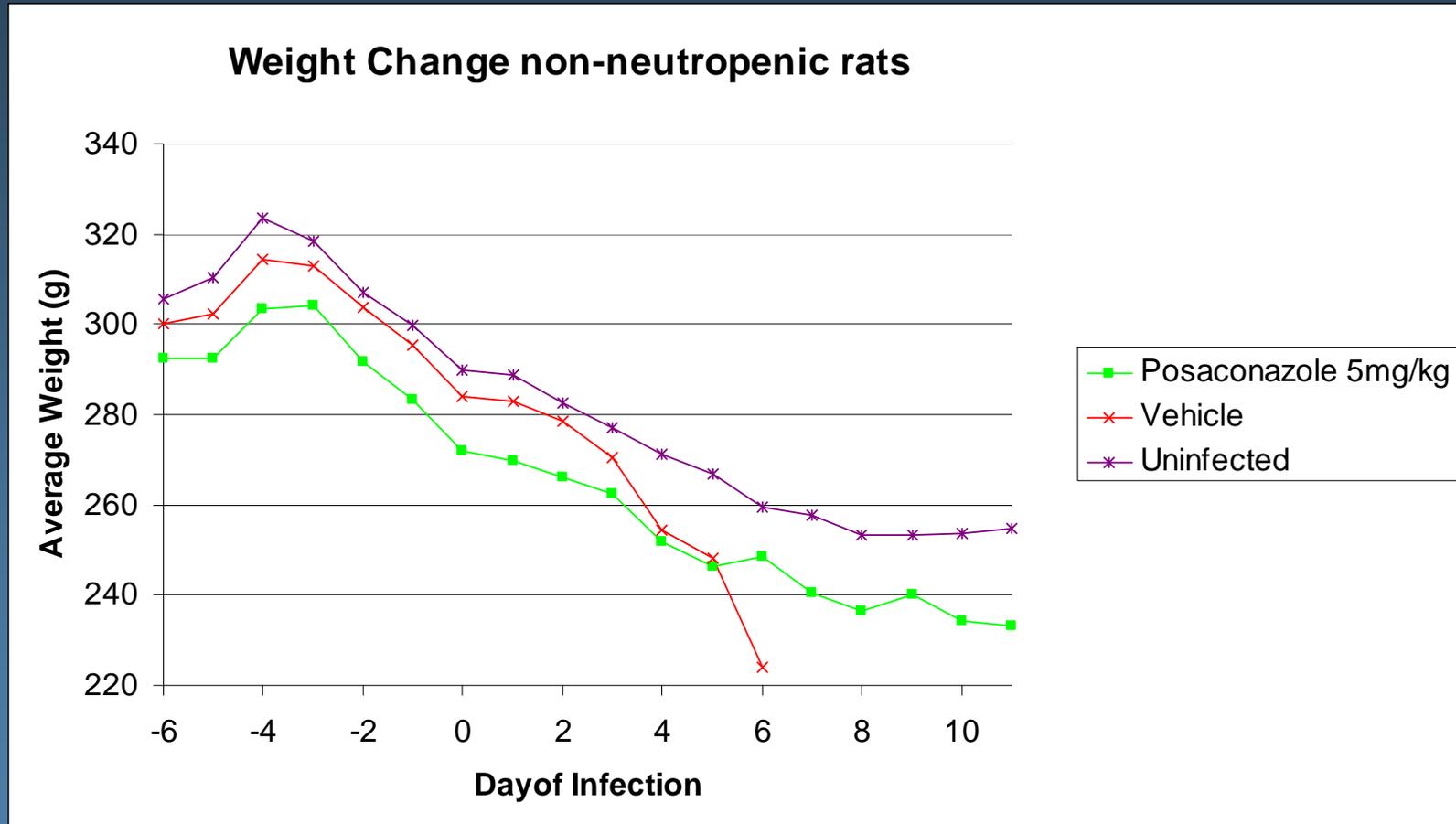
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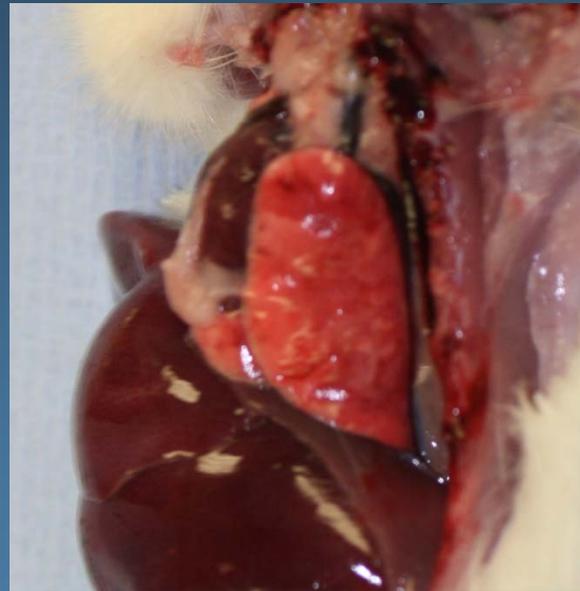
# Non-Neutropenic Rat Model of IPA



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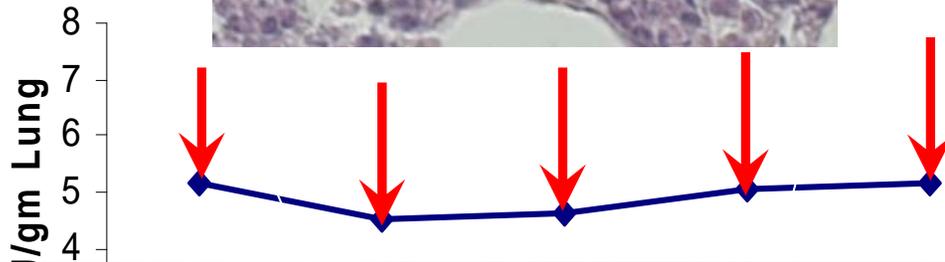


Disease

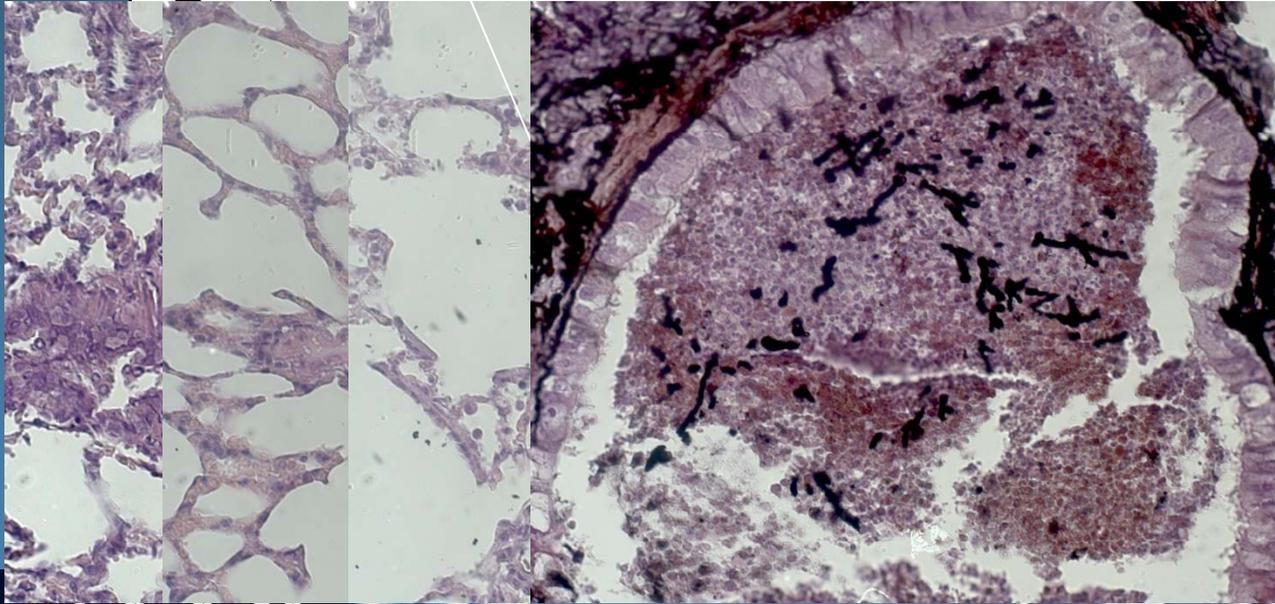
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(NON-

/gm Lung

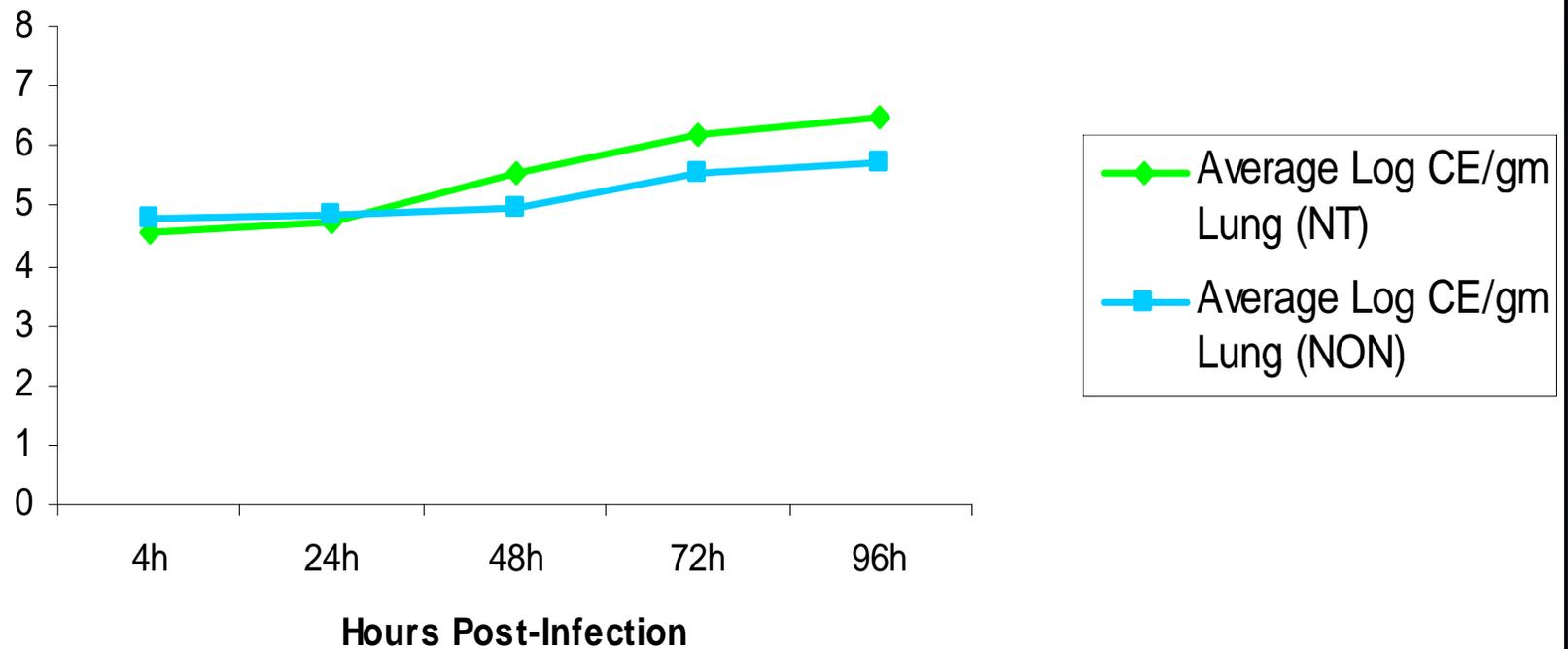


◆ Average Log CFU/gm Lung (NON)

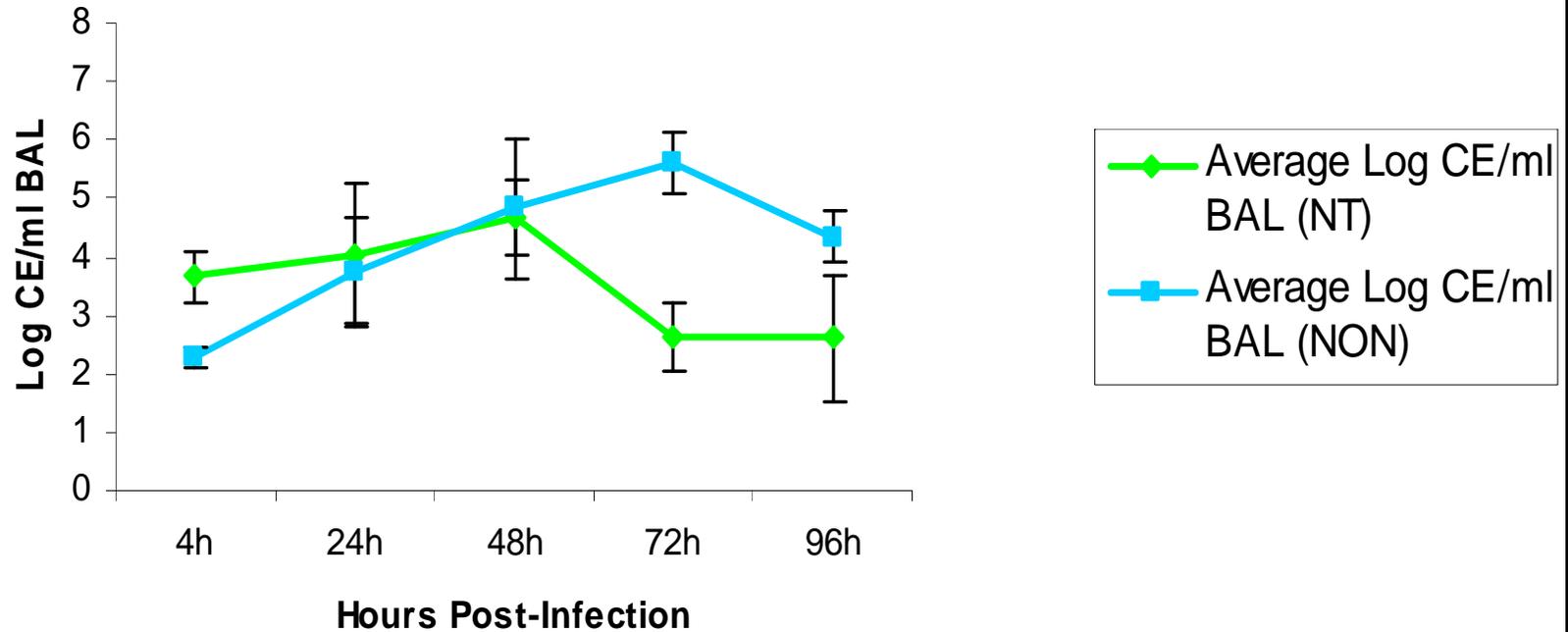


-neutropenic hosts is  
of lung function

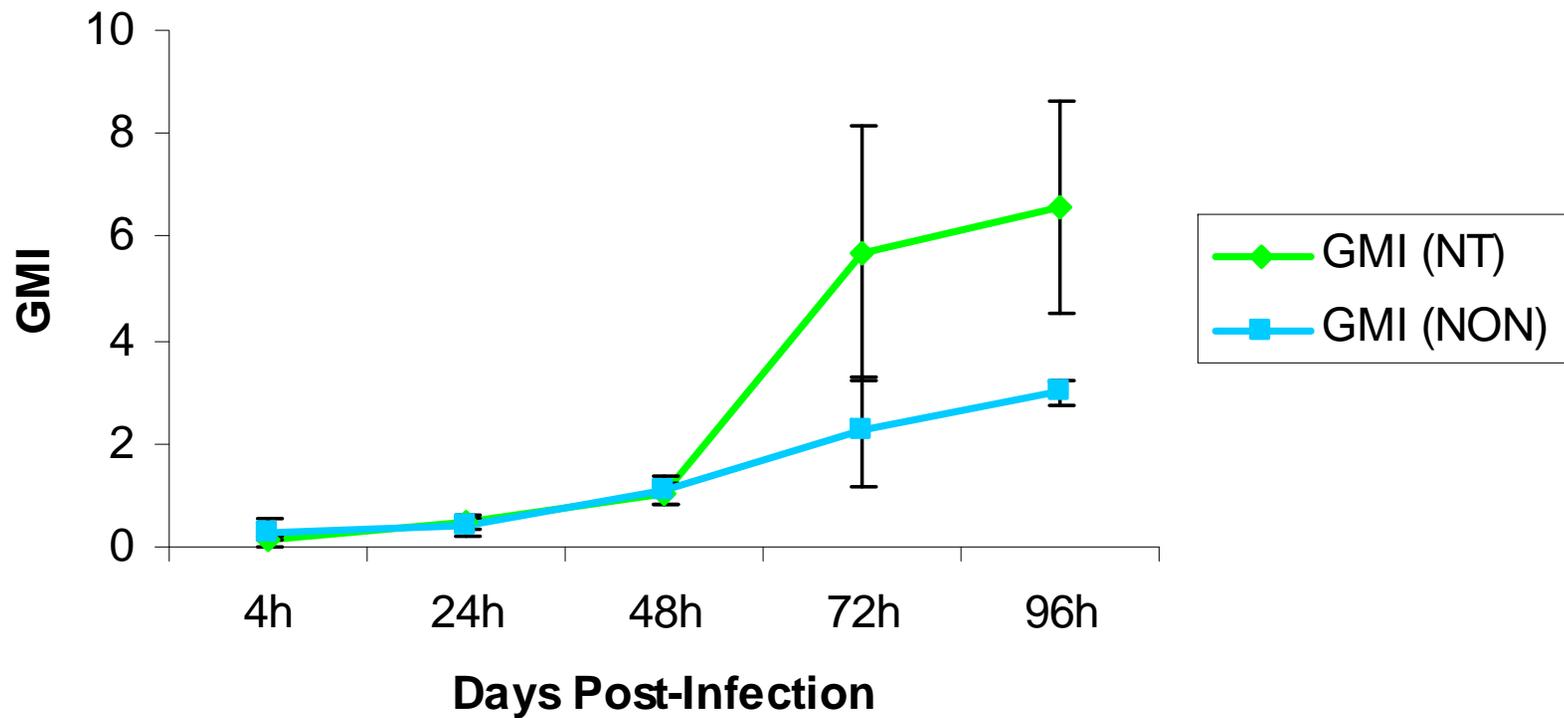
## Lung Burden Progression (qPCR) (Neutropenic vs Non-Neutropenic)



### BAL Burden Progression (qPCR) (Neutropenic vs Non-Neutropenic)



## GMI (Neutropenic Vs Non-Neutropenic)



# Summary

- The non-neutropenic model is characterised by white cell recruitment and low levels of tissue invasion.
- 100% mortality in untreated rats ( $>5 \times 10^8$ cfu/ml)
- Large numbers of *Aspergillus* can be recovered in BAL
- It is possible to monitor disease progression using galactomannan and qPCR as a surrogate marker but levels remain low
- Posaconazole is effective but amphotericin and caspofungin are ineffective

